2011 Epidemiologic Profiles of HIV, STD, and Hepatitis in Missouri

Bureau of HIV, STD, and Hepatitis
Division of Community and Public Health
Missouri Department of Health and Senior Services
1.866.628.9891
http://health.mo.gov/data/hivstdaids/

2011 Epidemiologic Profiles of HIV, STD, and Hepatitis in Missouri

TABLE OF CONTENTS

Background

The Division of HIV/AIDS Prevention at the Centers for Disease Control and Prevention (CDC) and the Health Resources and Services Administration (HRSA) released the *Integrated Guidelines for Developing Epidemiologic Profiles* in 2004. These guidelines are meant to assist states in creating standardized profiles that meet the planning needs of HIV prevention and care programs, while allowing freedom to portray unique situations within the state. The epidemiologic profile is divided into two sections, within which five questions are addressed.

Profile Organization:

Section 1: Core Epidemiological Questions

This section deals with understanding the characteristics of the general population, the distribution of human immunodeficiency virus (HIV) disease and sexually transmitted diseases (STDs) in the state, and a description of the population at risk for HIV and STD infection. This section is organized around three key questions:

Question 1: What are the sociodemographic characteristics of the general population of Missouri?
Describes the overall demographic and socioeconomic characteristics of the general population of Missouri.

Question 2: What is the scope of the HIV/AIDS epidemic in Missouri?
Describes the impact of the HIV/AIDS epidemic in Missouri.

Question 3: What are the indicators of HIV/AIDS infection risk in Missouri?
Provides an analysis of the high-risk populations. Both the direct and indirect measures of risk behaviors associated with HIV transmission and the indicators of high-risk behaviors are described in this section.

Section 2: Ryan White HIV/AIDS Care Act Special Questions and Considerations

This section focuses on the questions that pertain to the HRSA HIV/AIDS care planning groups. It describes access to, utilization of, and standards of care among persons in Missouri who are HIV infected. It is organized around two key questions:

Question 4: What are the HIV service utilization patterns of individuals with HIV disease in Missouri?
Characterizes patterns in the use of services by the population living with HIV/AIDS in Missouri.

Question 5: What are the number and characteristics of the individuals who know they are HIV positive but who are not in care?
Assesses the unmet need of persons who know they are HIV positive, but are not in care. Describes their service needs and perception of care.

General Information:

The 2011 *Profiles* provides a selective update of the questions in the *Profiles* including the epidemiology of HIV ,STDs, hepatitis; and unmet primary medical care needs among individuals living with HIV through 2011 (Questions #2, #3, and #5). Please refer to the data sources used in the *Profiles* on page ii and the technical notes on page iii to develop a better understanding for interpreting the data presented. Additional sections of the profile are dedicated to providing data specific to each of the six HIV planning regions to assist with regional level planning efforts.

Missouri Planning Cycle:

The statewide Missouri Community Planning Group (CPG) operates on a five year planning cycle. The current comprehensive prevention plan was developed in 2010, and runs from 2011-2015. To best serve the CPG planning process, updates to the epidemiologic profile are designed to coincide with the CPG's planning cycle. As a result, a complete update of all five questions of the epidemiologic profile is completed every five years, coinciding with the development of the new comprehensive HIV prevention plan. In the other years, updates will only be made to selected questions of the profile. The current *Profiles* represents a selective update to all questions in the *Profiles*. For data from the most recent comprehensive *Profiles*, please refer to the *2009 Epidemiologic Profiles*, which can be accessed at http://health.mo.gov/data/hivstdaids/pdf/MOHIVSTD2009.pdf.

Data Sources

1. *Population Data*

Population Estimates, Missouri Department of Health (MDHSS), Bureau of Health Informatics and U.S. Census Bureau

MDHSS maintains population files for Missouri and its counties based on data provided by the U.S. Census Bureau in partnership with the Federal State Cooperative Program for Population Estimates. Census counts are produced every ten years, with the 2010 census representing the most recent census. Population estimates are produced for non-census years based on adjustments made to the most recent census counts. Due to the time required to compute the estimates, the most recent year's estimates are not available for use in the *Profiles*, and the 2010 census counts are used instead. Beginning with the 2008 population estimates new race/ethnicity categories are being used, which include a separate estimate for persons identifying being of more than one race. This change reflects the current level of race/ethnicity detail that is captured for HIV surveillance data. As a result of the change, the population estimates from *Profiles* prior to 2010 will not be comparable with the current *Profiles*.

2. *HIV Epidemic Data*

HIV/AIDS Surveillance Data, eHARS

Missouri's communicable disease reporting rule, 19 CSR 20-20.020 established reporting of AIDS cases in 1983, named HIV cases in 1987, CD4 lymphocyte counts in 1991, and HIV viral load lab results in 2000. Demographic information, vital status, mode of exposure, laboratory results, and treatment and service referrals are collected on standardized case report forms and laboratory reports. The MDHSS, Bureau of HIV, STD, and Hepatitis (BHSH) is responsible for managing the HIV/AIDS surveillance data, stored in the evaluation HIV/AIDS Reporting System (eHARS). Evaluations have shown a high level of completeness of the surveillance system. However, the surveillance system primarily collects information only on individuals diagnosed with HIV disease in Missouri. Some information regarding those currently living with HIV in Missouri is maintained in eHARS, but is not complete. Therefore, the *Profiles* only includes data on those whose most recent diagnosis (HIV or AIDS) occurred in Missouri. The data collected in the surveillance system is based on diagnosis date, and not the time of infection. The diagnosis can be made at any clinical stage of the disease. The characteristics associated with new diagnoses may not reflect characteristics associated with recent infection. The surveillance system only includes data on individuals that are tested confidentially and reported. Members of certain subpopulations may be more or less likely to be tested, and therefore different subpopulations could be over or under-represented among diagnosed and reported HIV cases.

3. *HIV-Related Indicators of Risk Data*

Hepatitis Surveillance Data, MDHSS, WebSurv

Missouri's communicable disease reporting rule, 19 CSR 20-20.020 requires reporting of acute and chronic hepatitis B and C cases, perinatal hepatitis B, and prenatal hepatitis B within three days to the local health authority or MDHSS. Demographic information, vital status, laboratory results, and treatment information are collected on standardized report forms and laboratory reports. MDHSS BHSH is responsible for managing the hepatitis surveillance data, stored in the Missouri Health Surveillance Information Systems (WebSurv). Limitations of the data include incomplete race/ethnicity information and underreporting.

STD Surveillance Data, STD*MIS

Missouri's communicable disease reporting rule, 19 CSR 20-20.020 requires reporting of chlamydia and gonorrhea cases within three days, and syphilis, including congenital syphilis, within one day to the local health authority or MDHSS. Demographic information, vital status, laboratory results, and treatment information are collected on standardized report forms and laboratory reports. MDHSS BHSH is responsible for managing all reportable STD surveillance data, stored in the STD Management Information System (STD*MIS) database. Data in this system are presented based on the date of report to the health department and not the diagnosis date. The data represent only those individuals tested and reported, which underestimates the true burden of infection as many infected individuals do not seek care, often due to a lack of symptoms. In addition, many people receive treatment without being tested, again underestimating the true burden of infection. Since morbidity is frequently entered based on the receipt of laboratory reports at MDHSS, race and ethnicity information is often not available. Incomplete race and ethnicity reporting limits the interpretation of trends for these characteristics.

Tuberculosis Disease Surveillance Data, WebSurv

Missouri's communicable disease reporting rule, 19 CSR 20-20.020 requires reporting of tuberculosis

disease within one day to the local health authority or MDHSS. Demographic information, vital status, laboratory results, and treatment information are collected on standardized report forms and laboratory reports. MDHSS Bureau of Communicable Disease Control and Prevention is responsible for managing the tuberculosis surveillance data, stored in WebSurv. Limitations of the data include incomplete race/ethnicity information and underreporting.

4. HIV Care Services Data

HIV Case Management Data, SCOUT

MDHSS participates in a cooperative agreement with HRSA for the provision of several programs funded by the Ryan White HIV Treatment Modernization Act. Data for persons served by these programs are collected and stored in the Securing Client Outcomes Using Technology (SCOUT) database. Data include key demographic and eligibility related variables for persons residing in Missouri, and portions of Illinois and Kansas. These data are used to monitor the level of need and the provision of services for individuals utilizing Ryan White funded services.

Technical Notes

HIV Disease, HIV case, AIDS case: HIV disease includes all individuals diagnosed with the HIV virus regardless of the stage of disease progression. All persons with HIV disease can be sub-classified as either an **AIDS case** (if they are in the later stages of the disease process and have met the case definition for AIDS), or an **HIV case** (if they are in the earlier stages of the disease process and have not met the AIDS case definition). In this report, the sub-classification of HIV or AIDS is based on an individual's status of disease progression as of December 31, 2011.

Date of Diagnosis: Represents the date an individual was first diagnosed with the HIV virus, regardless of the stage of disease progression. However, in many instances the initial diagnosis of infection does not occur until several years after the initial infection, so at best the trends in diagnosed HIV cases can only approximate actual trends in new HIV infections.

Reporting Delay: Delays exist between the time HIV infection is diagnosed and the time the infection is reported to MDHSS. As a result of reporting delays, case numbers for the most recent years of diagnosis may not be complete. Data from recent years should be considered provisional. The data presented in this report have not been adjusted for reporting delay. The data in this report represent all information reported to MDHSS through February 28, 2012.

Place of Residence: Data are presented based on an individual's residence at time of most recent diagnosis of HIV or AIDS. Only cases whose most recent diagnosis was Missouri are included in the analyses presented in the *Profiles*. This may or may not correspond with the individual's residence at the time of initial infection, or to the current residence.

Vital Status: Cases are presumed to be alive unless MDHSS has received notification of death. Current vital status information for cases is ascertained through routine matches with Missouri death certificates, reports of death from other states' surveillance programs, and routine site visits with major reporting sites. In 2011, the surveillance program conducted a comprehensive match between HIV cases reported to Missouri which were still presumed to be living and national death index files from 1985-2009. The match identified over 200 previously unreported deaths among Missouri cases. As a result, the number of persons reported living with HIV from 2002-2010 in the current *Profiles* is lower than the number of persons reporting living with HIV disease during the same time period in the 2010 *Profiles*. The lower number of living cases in the 2011 *Profiles* is due to the adjustments based on results of the death matching activities, and not due to a true decrease in the prevalence of the disease. Revisions for the number of persons living at the end of the year for the past ten years can be found in Figure 2 of the 2011 *Profiles.*

Exposure Category: Despite possible existence of multiple methods through which HIV can be transmitted, cases are assigned a single most likely exposure category based on a hierarchy developed by the CDC. A limitation of the dataset is the large number of cases reported with an undetermined exposure category. Data on cases with missing exposure category information have been proportionately re-distributed into known exposure categories in selected analyses.

Routine Interstate Duplicate Review (RIDR): The mobility of American citizens impacts the ability to accurately track individuals living with HIV/AIDS. Mobility may result in the same HIV infected person being counted in two or more different states. To help respond to potential duplication problems, the CDC initiated the Interstate

Epi Profiles Summary: Introduction

Duplication Evaluation Project (IDEP), now called Routine Interstate Duplicate Review (RIDR) in 2002. RIDR compares patient records throughout the nation in order to identify duplicate cases. The states with duplicate cases contact one another to compare patient profiles in order to determine the state to which the case belongs, based on residence during the earliest date of diagnosis. Because of this process, the cumulative number of cases within Missouri may change, but the process has increased the accuracy of Missouri's data by reducing the chance that a case has been counted more than once nationally.

Small Numbers: Data release limitations are set to ensure that the information cannot be used to inadvertently identify an individual. It is difficult to make meaningful statements concerning trends in areas with low numbers of cases. Please interpret rates where the numerator is less than 20 cases with caution because of the low reliability of rates based on a small number of cases.

Glossary of Terms: A glossary of terms is located at the end of the profile. If the reader is unclear about any terms used in the *Profiles*, please feel free to contact MDHSS BHSH for additional information.

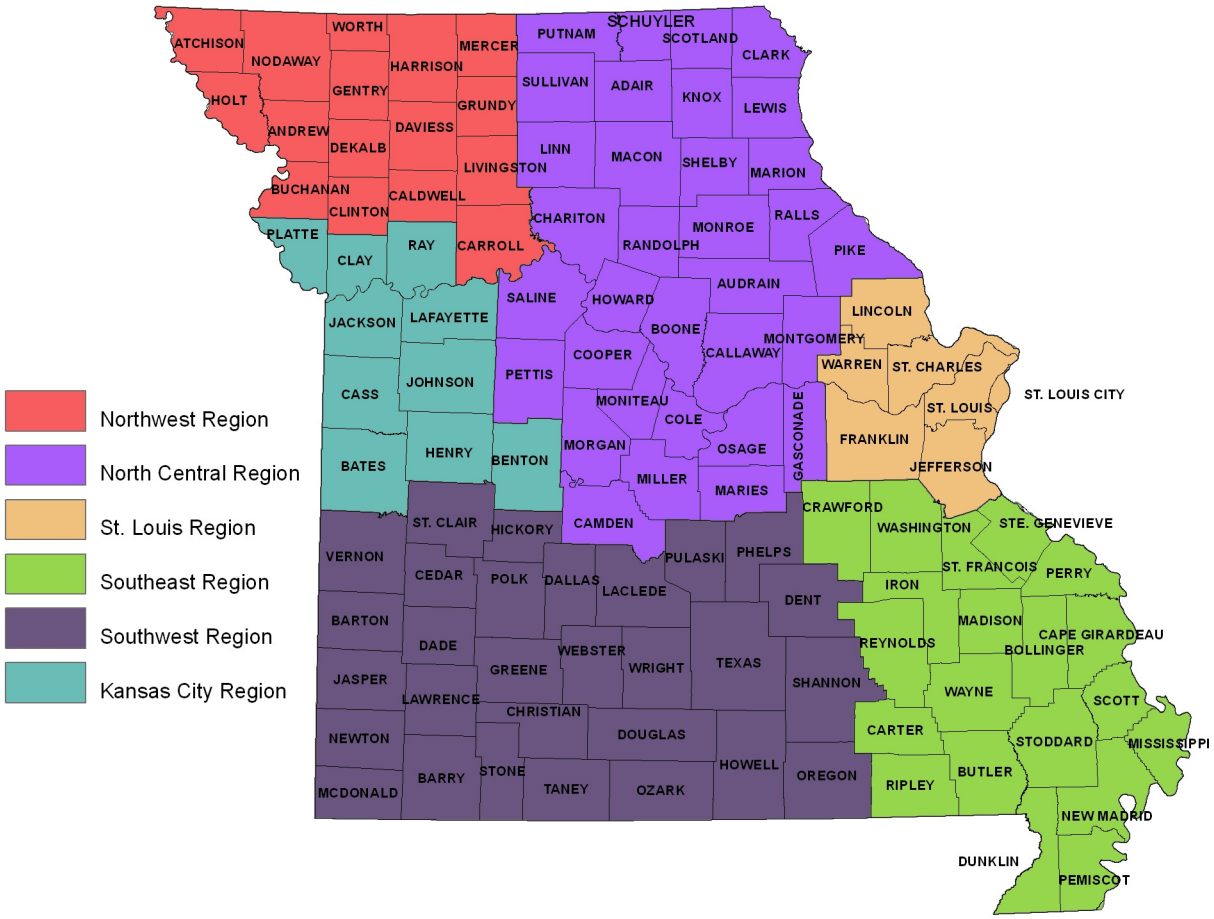
Race/Ethnicity: Race and ethnicity information has been collected under two different systems in the HIV/AIDS reporting system. Since many cases were reported under the old classification system, the use of the race and ethnicity categories from the old classification system will be maintained in this report. All cases identified with a Hispanic ethnicity will be reported in the *Profiles* as Hispanic, regardless of reported race information. In the text of this document, whenever cases are being discussed, the term "White" means White, not Hispanic, and "Black/ African American" means Black/African American, not Hispanic. The number of cases reported as "not Hispanic" may include individuals whose ethnicity was not reported. Individuals who reported multiple racial categories or whose race was unknown are included in the category "Other/Unknown" or "Two or More Races/ Unknown" depending on the table or figure.

Diagnoses in Correctional Facilities: For persons living in Missouri correctional facilities (which include state, county, and local facilities) at the time of their HIV/AIDS, chlamydia or gonorrhea diagnosis, the location of the correctional facility is considered the individual's residence at diagnosis. For persons living in Missouri correctional facilities at the time of their syphilis diagnosis, the residence at diagnosis is considered the individual's address prior to being incarcerated. Data for persons diagnosed in Missouri correctional facilities are included in the statewide data, since most of these individuals were likely Missouri residents prior to incarceration. However, diagnoses in Missouri correctional facilities are not included in the HIV/AIDS data for the six HIV regions of the state. This is based on the fact that these individuals, especially those in the state prison system, are often incarcerated in a different location than where they were residing (and were likely infected) prior to imprisonment. If included among the cases from the area where imprisoned at the time of diagnosis, it would distort the picture of the epidemic in that area. Individuals diagnosed at federal correctional facilities in Missouri are not included in any data presented.

Anonymous Testing: The data do not include cases of HIV infection reported or diagnosed in persons anonymously tested at the state's four anonymous testing sites in St. Louis City, Kansas City, Springfield, and Columbia.

Geographic Area vs. HIV Region: When data are presented by geographic area, the St. Louis City represents individuals diagnosed in the St Louis City limits. St. Louis County represents individuals diagnosed in St. Louis County. Kansas City represents individuals diagnosed in the Kansas City limits. Outstate represents individuals diagnosed in all other areas. Refer to the map on the following page for the counties included when data are presented by HIV region.

Missouri HIV Regions



Abbreviations

AIDS=Acquired Immunodeficiency Syndrome

BHSH=Bureau of HIV, STD, and Hepatitis

CDC=Centers for Disease Control and Prevention

CPG=Community Planning Group

eHARS=evaluation HIV/AIDS Reporting System

HCV=Hepatitis C Virus

HIV=Human Immunodeficiency Virus

IDEP=Interstate Duplicate Evaluation Project

IDU=Injection drug use/Injection drug user

HRSA=Health Resources and Services Administration

MDHSS=Missouri Department of Health and Senior Services

MSM=Men who have sex with men

MSM/IDU=Men who have sex with men and inject drugs

NIR=No indicated risk

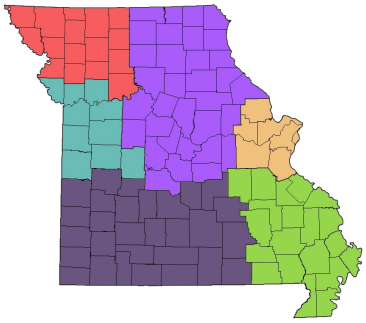
P&S=Primary and secondary

RIDR=Routine Interstate Duplicate Review

STD=Sexually Transmitted Disease

STD*MIS=Sexually Transmitted Disease Management Information System

TB=Tuberculosis



MISSOURI STATE SUMMARY

Population Counts, by HIV Region, Missouri, 2010							
	St. Louis Region	Kansas City Region	Northwest Region	North Central Region	Southwest Region	Southeast Region	Missouri Total
Sex							
Male	1,005,552	610,343	124,511	377,516	567,742	247,813	**2,933,477**
Female	1,078,485	642,401	123,842	382,031	577,147	251,544	**3,055,450**
Total	2,084,037	1,252,744	248,353	759,547	1,144,889	499,357	**5,988,927**
Race/Ethnicity							
White	1,529,461	932,943	227,881	675,602	1,035,166	449,695	**4,850,748**
Black/African American	407,201	182,889	7,666	38,425	20,476	30,492	**687,149**
Hispanic	52,931	81,648	6,836	20,054	42,495	8,506	**212,470**
Asian/Pacific Islander	54,202	21,466	1,647	9,843	13,444	2,382	**102,984**
American Indian/Alaskan Native	4,173	5,347	886	2,359	9,608	1,689	**24,062**
Two or More Races/Other Race	36,069	28,451	3,437	13,264	23,700	6,593	**111,514**
Total	2,084,037	1,252,744	248,353	759,547	1,144,889	499,357	**5,988,927**
Race/Ethnicity-Males							
White Male	746,466	456,550	112,726	333,547	510,035	221,742	**2,381,066**
Black/African American Male	185,862	85,441	5,061	20,994	12,485	16,249	**326,092**
Hispanic Male	27,566	42,026	3,717	10,538	22,328	4,565	**110,740**
Asian/Pacific Islander Male	25,935	9,953	803	4,562	6,188	1,075	**48,516**
American Indian/Alaskan Native Male	2,070	2,650	443	1,235	4,850	845	**12,093**
Two or More Races/Other Race Male	17,653	13,723	1,761	6,640	11,856	3,337	**54,970**
Total	1,005,552	610,343	124,511	377,516	567,742	247,813	**2,933,477**
Race/Ethnicity-Females							
White Female	782,995	476,393	115,155	342,055	525,131	227,953	**2,469,682**
Black/African American Female	221,339	97,448	2,605	17,431	7,991	14,243	**361,057**
Hispanic Female	25,365	39,622	3,119	9,516	20,167	3,941	**101,730**
Asian/Pacific Islander Female	28,267	11,513	844	5,281	7,256	1,307	**54,468**
American Indian/Alaskan Native Female	2,103	2,697	443	1,124	4,758	844	**11,969**
Two or More Races/Other Race Female	18,416	14,728	1,676	6,624	11,844	3,256	**56,544**
Total	1,078,485	642,401	123,842	382,031	577,147	251,544	**3,055,450**
Age							
<2	51,786	34,262	6,047	18,608	29,764	12,430	**152,897**
2-12	298,883	190,785	34,593	105,537	165,402	71,367	**866,567**
13-18	176,907	102,023	20,149	60,391	93,620	40,184	**493,274**
19-24	160,066	97,553	22,448	78,469	104,826	38,600	**501,962**
25-44	545,919	336,418	59,178	183,678	277,912	120,978	**1,524,083**
45-64	576,572	332,370	66,204	201,899	298,187	136,618	**1,611,850**
65+	273,904	159,333	39,734	110,965	175,178	79,180	**838,294**
Total	2,084,037	1,252,744	248,353	759,547	1,144,889	499,357	**5,988,927**

Source: MDHSS, Bureau of Health Informatics

Key Highlights: What is the scope of the HIV/AIDS epidemic in Missouri?

Magnitude of the Problem and General Trends

- From 1982 to 2011, there have been a total of 18,404 persons diagnosed with HIV disease in Missouri and reported to MDHSS. Of these individuals, 12,617 (69%) were subcategorized as AIDS cases, and the remaining 5,787 (31%) were subcategorized as HIV cases. Of the cumulative number of persons diagnosed with HIV disease, 11,138 (61%) were presumed to be living at the end of 2011.
- The number of new diagnoses has fluctuated slightly between 2002 and 2011, with no sustained upward or downward trend in new HIV diagnoses over this time period. In 2011, there were 515 persons newly diagnosed with HIV disease. However, this value has not been adjusted for reporting delays, and therefore is likely to change.
- The number of persons living with HIV disease continued to increase every year, from 7,839 persons in 2002 to 11,138 persons in 2011. The increase is primarily due to the fact that individuals are living longer with the disease as a result of improved treatment and medical care.

Where

- HIV disease disproportionately impacts the state's two major metropolitan areas (St. Louis and Kansas City). The highest rates of new diagnoses and persons living with HIV disease, as well as the largest numbers of cases, were found in these two areas.
- The rate of persons newly diagnosed who remained classified as HIV cases at the end of 2011 was highest in St. Louis City (29.4 per 100,000). The second highest rate was in Kansas City (21.3 per 100,000). The rate of persons newly diagnosed who were classified as AIDS cases at the end of 2011 was highest in St. Louis City (8.8 per 100,000), and second highest in Kansas City (7.8 per 100,000).

Who

Sex

- Males represented the majority of persons newly diagnosed (85%) and living with (83%) HIV disease. The rates of new diagnoses and persons living with HIV disease were more than five times greater among males than females.

Race/Ethnicity

- HIV disease continues to disproportionately impact minorities. The rate of newly diagnosed HIV disease cases was 8.6 times greater among blacks/African Americans than whites, and 3.2 times greater among Hispanics than whites. The disparity was even greater among black/African American females. While black/African American females represented only 12% of Missouri's female population, black/African American females accounted for 76% of new female HIV disease diagnoses. It should be emphasized that race/ethnicity in itself is not a risk factor for HIV infection; however, among many racial/ethnic minority populations, social, economic, and cultural factors are associated with high rates of HIV risk behavior. These factors also may be barriers to receiving HIV prevention information or accessing HIV testing, diagnosis, and treatment.

Age

- The age of individuals living with HIV disease has increased over time. In 2002, the largest numbers of persons living with HIV disease were 35-39 and 40-44 years of age, whereas in 2011 persons 45-49 years old represented the largest number of living cases.
- Although the age of persons living with the disease has increased over time, the age of new diagnoses has decreased. In 2011, the largest numbers of persons newly diagnosed with HIV disease were between 19-24 years of age, compared to 2002 when the largest numbers of new diagnoses were 35-39 years of age. The difference may be attributed to increased testing among younger individuals or due to a true increase in the number of new infections at a younger age.

Exposure Category

- The majority of new diagnoses continue to be attributed to men who have sex with men. Among females, heterosexual contact was the primary mode of transmission. In 2011, there was one person less than 13 years of age diagnosed with HIV disease.

Figure 1. HIV disease cases (living and deceased), by current HIV vs. AIDS status, Missouri, 1982—2011

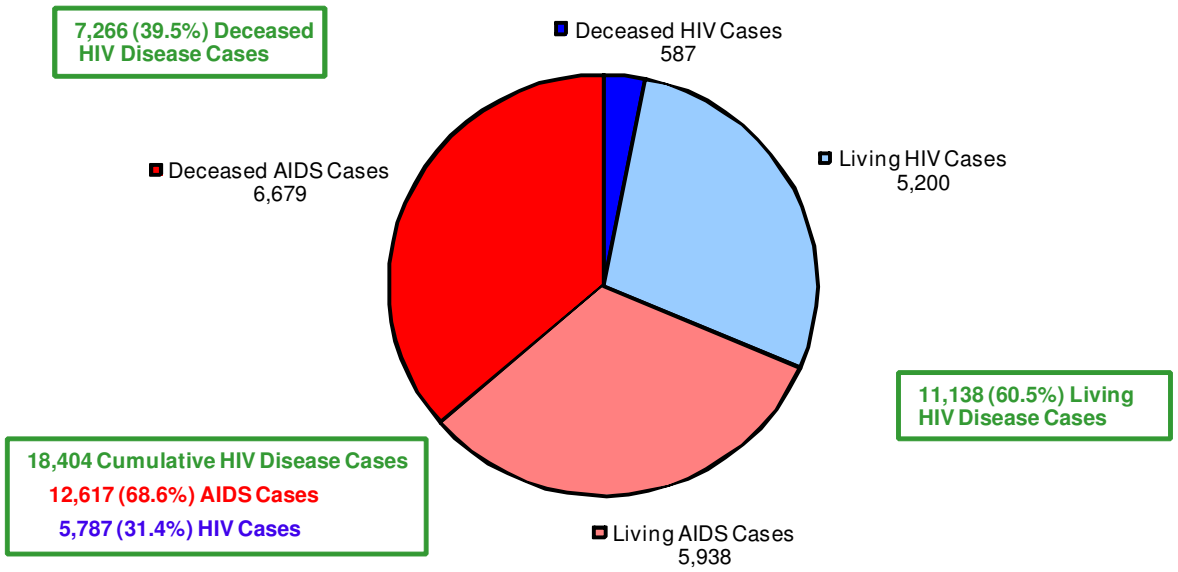
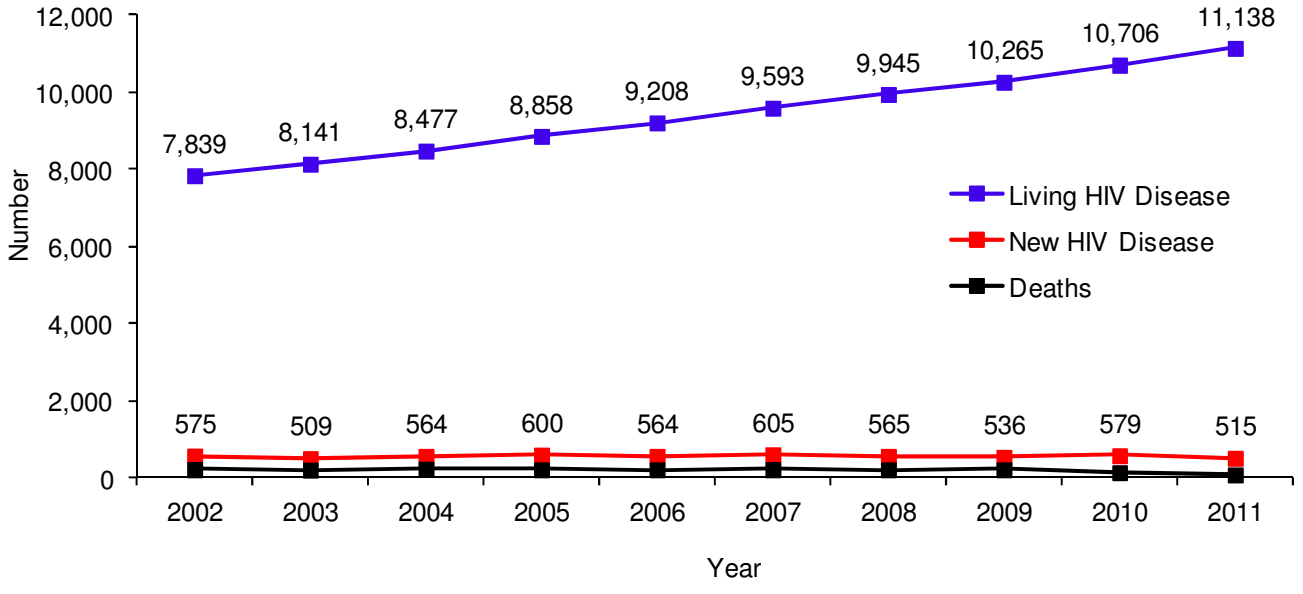


Figure 2. Living and new HIV disease cases and deaths by year*, Missouri, 2002—2011

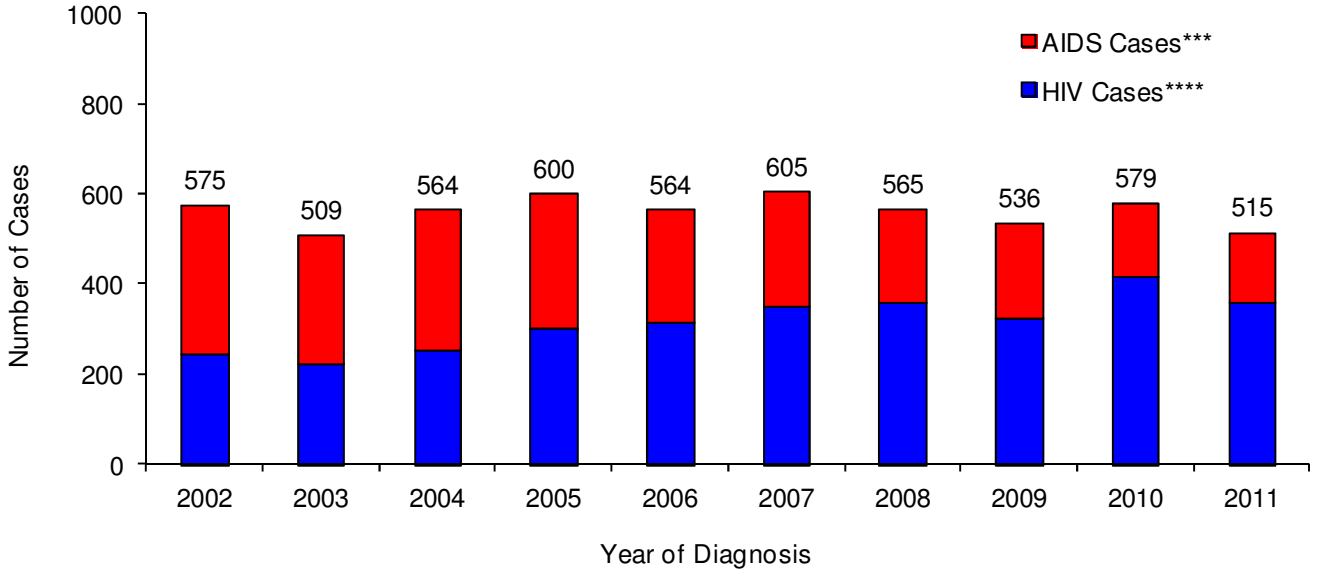


*For living HIV disease cases-the number of individuals living with HIV disease at the end of the year; For new HIV disease cases-the number of individuals newly diagnosed in the year; For HIV disease deaths-the number of individuals that died in the year.

From 1982 to 2011, there have been a total of 18,404 HIV disease cases diagnosed in Missouri and reported to MDHSS (Figure 1). Of the cumulative cases reported, 61% were still presumed to be living with HIV disease at the end of 2011. Among those living with HIV disease, 5,200 were classified as HIV cases at the end of 2011 and 5,938 were classified as AIDS cases.

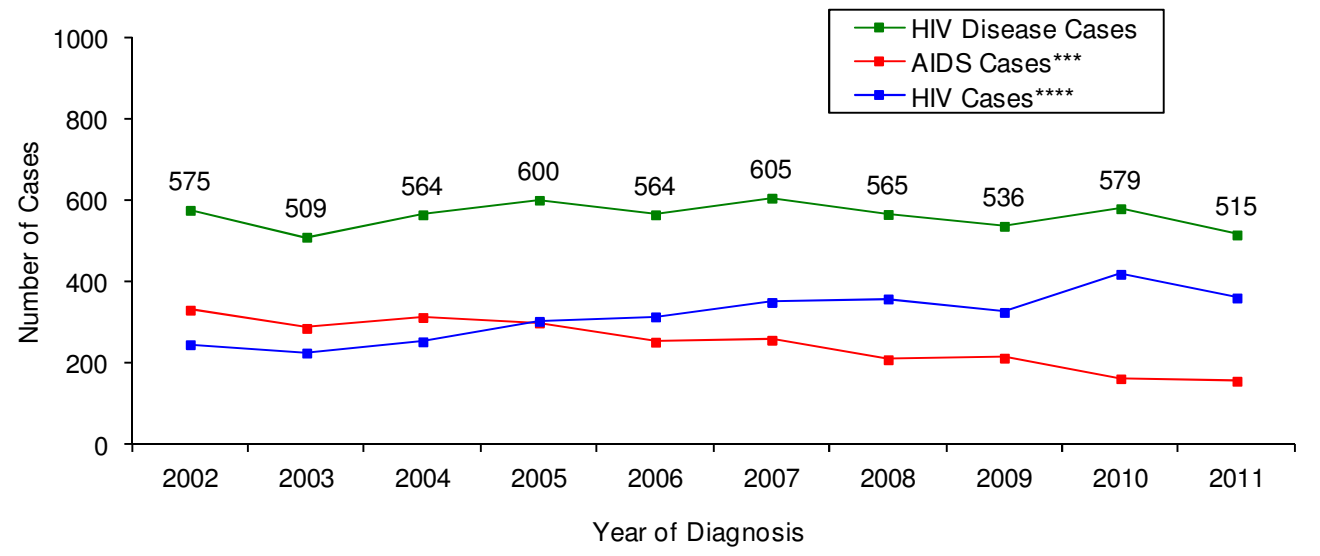
At the end of 2011, there were 11,138 persons living with HIV disease whose most recent diagnosis occurred in Missouri (Figure 2). The number of people living with HIV disease increased each year. There were 515 new HIV disease diagnoses in 2011. The number of new diagnoses from 2002 to 2011 has fluctuated; the number of new diagnoses ranged from 509 cases in 2003 to 605 cases in 2007. The number of deaths among persons with HIV disease each year has remained generally steady. The lower number of deaths in 2011 was likely due to delays in death reporting.

Figure 3. HIV disease cases, by current status* and year of diagnosis, Missouri, 2002-2011**



*HIV case vs. AIDS case
**Cases are indicated by year of initial diagnosis reported to MDHSS. (The year in which the first diagnosis of the person, whether as an HIV case or an AIDS case, was documented by the Department).
***These cases were either: 1) initially reported as HIV cases and then later reclassified as AIDS cases because they subsequently met the AIDS case definition; or 2) initially reported as AIDS cases.
****These cases were initially reported as HIV cases and have remained HIV cases. They have not met the case definition for AIDS as of December 31, 2011.

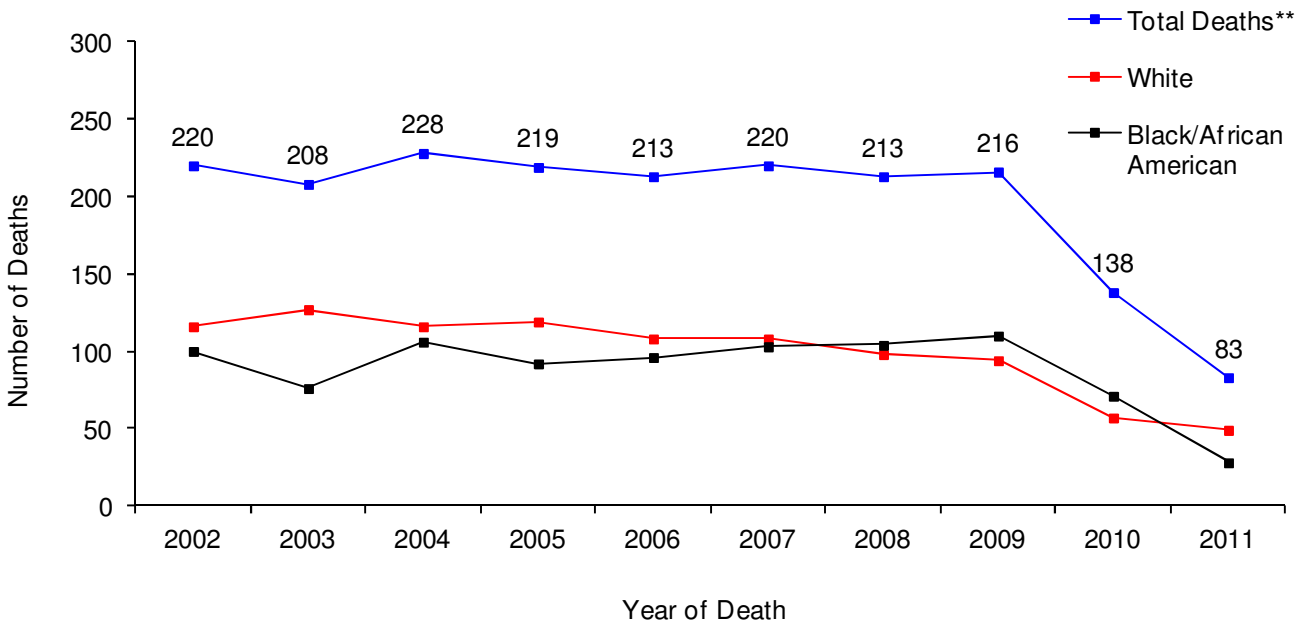
Figure 4. Reported HIV disease cases, by current status* and year of diagnosis, Missouri, 2002-2011**



*HIV case vs. AIDS case
**Cases are indicated by year of initial diagnosis reported to MDHSS. (The year in which the first diagnosis of the person, whether as an HIV case or an AIDS case, was documented by the Department).
***These cases were either: 1) initially reported as HIV cases and then later reclassified as AIDS cases because they subsequently met the AIDS case definition; or 2) initially reported as AIDS cases.
****These cases were initially reported as HIV cases and have remained HIV cases. They have not met the case definition for AIDS as of December 31, 2011.

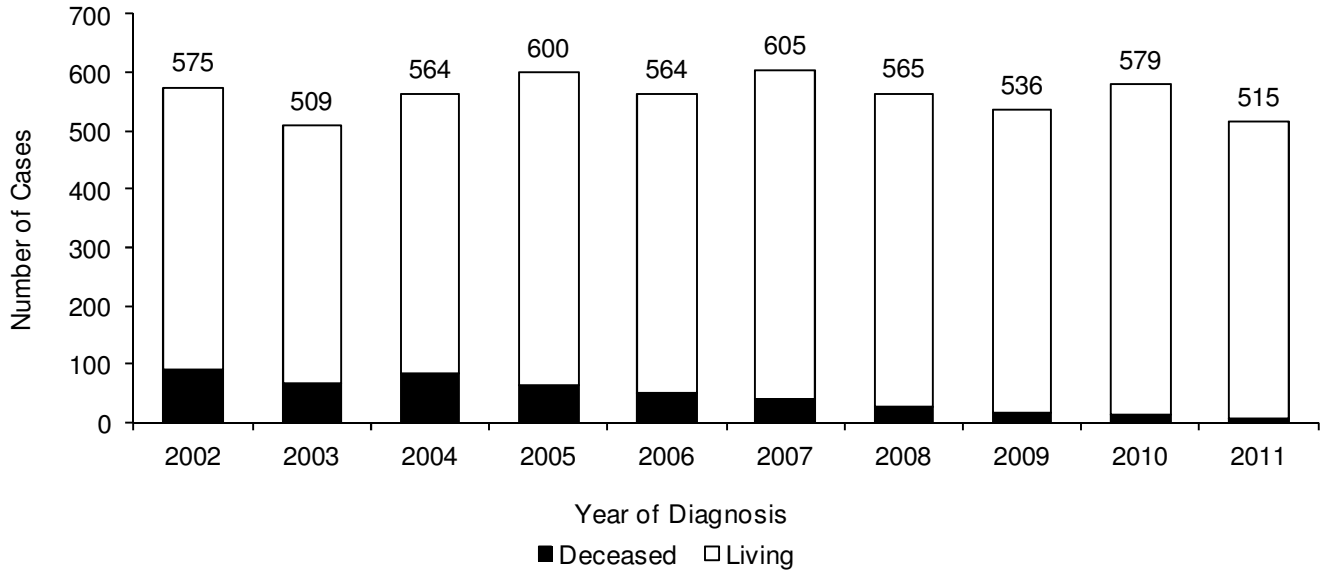
Between 2002 and 2011, the number of new HIV disease diagnoses has ranged from 509 cases in 2003, to 605 cases in 2007 (Figures 3 and 4). The number of new diagnoses has fluctuated slightly between 2002 and 2011. with no sustained upward or downward trend in new HIV diagnoses over this time period. Differences in the number of persons sub-classified as AIDS cases each year are due to the progression of the disease over time. For those diagnosed with HIV disease in 2002, a larger number are currently classified as AIDS cases compared to those diagnosed in 2011 because they have been living with the virus longer.

Figure 5. HIV disease deaths*, by selected race, by year of death, Missouri, 2002—2011†**



*Includes deaths that have occurred among those diagnosed with HIV disease in Missouri.
**Total deaths include persons of all races.
†Only includes deaths through December 31, 2011, and reported by February 28, 2012.

Figure 6. Persons diagnosed with HIV disease by current vital status* and year of diagnosis, Missouri, 2002—2011**



*Vital status on December 31, 2011.
**Cases are indicated by year of initial diagnosis reported to MDHSS. (The year in which the first diagnosis of the person, whether as an HIV case or an AIDS case, was documented by the Department).

The number of deaths among persons with HIV disease was generally steady between 2002 and 2009 (Figure 5). The lower number of deaths in 2010 and 2011 was likely due to delays in death reporting.

Of the 575 persons diagnosed with HIV disease in 2002, 92 (16%) were deceased by the end of 2011 (Figure 6). Among the 515 cases first diagnosed in 2011, 8 (2%) were deceased at the end of 2011. The difference in the proportion of cases that are deceased is due to the length of time individuals have been living with the disease.

Table 1. Living† HIV, AIDS, and HIV disease cases, by sex, by race/ethnicity, by race/ethnicity and sex, and by current age, Missouri, 2011

	HIV*			AIDS**			HIV Disease***		
	Cases	%	Rate****	Cases	%	Rate****	Cases	%	Rate****
Sex									
Male	4,249	81.7%	144.8	4,979	83.8%	169.7	9,228	82.9%	314.6
Female	951	18.3%	31.1	959	16.2%	31.4	1,910	17.1%	62.5
Total	5,200	100.0%	86.8	5,938	100.0%	99.1	11,138	100.0%	186.0
Race/Ethnicity									
White	2,609	50.2%	53.8	2,973	50.1%	61.3	5,582	50.1%	115.1
Black/African American	2,306	44.3%	335.6	2,645	44.5%	384.9	4,951	44.5%	720.5
Hispanic	206	4.0%	97.0	235	4.0%	110.6	441	4.0%	207.6
Asian/Pacific Islander	35	0.7%	34.0	23	0.4%	22.3	58	0.5%	56.3
American Indian/Alaskan Native	5	0.1%	20.8	11	0.2%	45.7	16	0.1%	66.5
Two or More Races/Unknown	39	0.8%	--	51	0.9%	--	90	0.8%	--
Total	5,200	100.0%	86.8	5,938	100.0%	99.1	11,138	100.0%	186.0
Race/Ethnicity-Males									
White Male	2,287	53.8%	96.0	2,683	53.9%	112.7	4,970	53.9%	208.7
Black/African American Male	1,737	40.9%	532.7	2,025	40.7%	621.0	3,762	40.8%	1153.7
Hispanic Male	165	3.9%	149.0	204	4.1%	184.2	369	4.0%	333.2
Asian/Pacific Islander Male	29	0.7%	59.8	17	0.3%	35.0	46	0.5%	94.8
American Indian/Alaskan Native Male	5	0.1%	41.3	10	0.2%	82.7	15	0.2%	124.0
Two or More Races/Unknown Male	26	0.6%	--	40	0.8%	--	66	0.7%	--
Total	4,249	100.0%	144.8	4,979	100.0%	169.7	9,228	100.0%	314.6
Race/Ethnicity-Females									
White Female	322	33.9%	13.0	290	30.2%	11.7	612	32.0%	24.8
Black/African American Female	569	59.8%	157.6	620	64.7%	171.7	1,189	62.3%	329.3
Hispanic Female	41	4.3%	40.3	31	3.2%	30.5	72	3.8%	70.8
Asian/Pacific Islander Female	6	0.6%	11.0	6	0.6%	11.0	12	0.6%	22.0
American Indian/Alaskan Native Female	0	0.0%	0.0	1	0.1%	8.4	1	0.1%	8.4
Two or More Races/Unknown Female	13	1.4%	--	11	1.1%	--	24	1.3%	--
Total	951	100.0%	31.1	959	100.0%	31.4	1,910	100.0%	62.5
Current Age‡									
<2	2	0.0%	1.3	0	0.0%	0.0	2	0.0%	1.3
2-12	26	0.5%	3.0	2	0.0%	0.2	28	0.3%	3.2
13-18	42	0.8%	8.5	12	0.2%	2.4	54	0.5%	10.9
19-24	407	7.8%	81.1	131	2.2%	26.1	538	4.8%	107.2
25-44	2,488	47.8%	163.2	2,149	36.2%	141.0	4,637	41.6%	304.2
45-64	2,089	40.2%	129.6	3,396	57.2%	210.7	5,485	49.2%	340.3
65+	146	2.8%	17.4	248	4.2%	29.6	394	3.5%	47.0
Total	5,200	100.0%	86.8	5,938	100.0%	99.1	11,138	100.0%	186.0

†Includes persons diagnosed with HIV disease in Missouri who are currently living, regardless of current residence. Includes persons diagnosed in Missouri correctional facilities.
*Cases which remained HIV cases at the end of 2011.
**Cases classified as AIDS by December 31, 2011.
***The sum of HIV cases and AIDS cases.
****Per 100,000 population based on 2010 MDHSS estimates.
‡Based on age as of December 31, 2011.
Note: Percentages may not total due to rounding.

Table 2. Diagnosed HIV, AIDS, and HIV disease cases, by sex, by race/ethnicity, by race/ethnicity and sex, and current age, Missouri, 2011

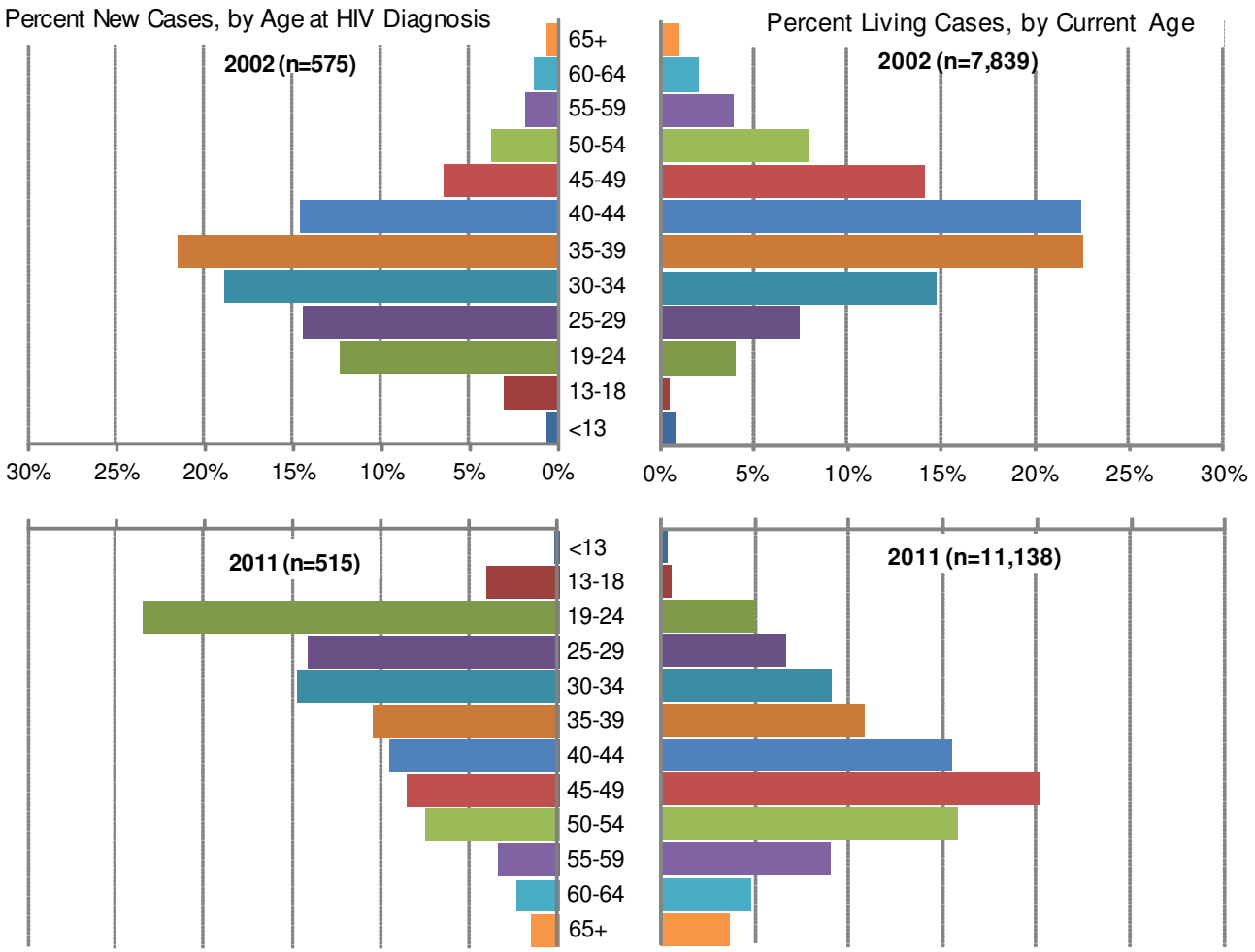
	HIV*			AIDS**			HIV Disease***		
	Cases	%	Rate****	Cases	%	Rate****	Cases	%	Rate****
Sex									
Male	298	82.8%	10.2	138	89.0%	4.7	436	84.7%	14.9
Female	62	17.2%	2.0	17	11.0%	0.6	79	15.3%	2.6
Total	360	100.0%	6.0	155	100.0%	2.6	515	100.0%	8.6
Race/Ethnicity									
White	143	39.7%	2.9	72	46.5%	1.5	215	41.7%	4.4
Black/African American	195	54.2%	28.4	68	43.9%	9.9	263	51.1%	38.3
Hispanic	17	4.7%	8.0	13	8.4%	6.1	30	5.8%	14.1
Asian/Pacific Islander	1	0.3%	1.0	1	0.6%	1.0	2	0.4%	1.9
American Indian/Alaskan Native	0	0.0%	0.0	0	0.0%	0.0	0	0.0%	0.0
Two or More Races/Unknown	4	1.1%	--	1	0.6%	--	5	1.0%	--
Total	360	100.0%	6.0	155	100.0%	2.6	515	100.0%	8.6
Race/Ethnicity-Males									
White Male	131	44.0%	5.5	68	49.3%	2.9	199	45.6%	8.4
Black/African American Male	148	49.7%	45.4	55	39.9%	16.9	203	46.6%	62.3
Hispanic Male	15	5.0%	13.5	13	9.4%	11.7	28	6.4%	25.3
Asian/Pacific Islander Male	1	0.3%	2.1	1	0.7%	2.1	2	0.5%	4.1
American Indian/Alaskan Native Male	0	0.0%	0.0	0	0.0%	0.0	0	0.0%	0.0
Two or More Races/Unknown Male	3	1.0%	--	1	0.7%	--	4	0.9%	--
Total	298	100.0%	10.2	138	100.0%	4.7	436	100.0%	14.9
Race/Ethnicity-Females									
White Female	12	19.4%	0.5	4	23.5%	0.2	16	20.3%	0.6
Black/African American Female	47	75.8%	13.0	13	76.5%	3.6	60	75.9%	16.6
Hispanic Female	2	3.2%	2.0	0	0.0%	0.0	2	2.5%	2.0
Asian/Pacific Islander Female	0	0.0%	0.0	0	0.0%	0.0	0	0.0%	0.0
American Indian/Alaskan Native Female	0	0.0%	0.0	0	0.0%	0.0	0	0.0%	0.0
Two or More Races/Unknown Female	1	1.6%	--	0	0.0%	--	1	1.3%	--
Total	62	100.0%	2.0	17	100.0%	0.6	79	100.0%	2.6
Current Age‡									
<2	1	0.3%	0.7	0	0.0%	0.0	1	0.2%	0.7
2-12	0	0.0%	0.0	0	0.0%	0.0	0	0.0%	0.0
13-18	14	3.9%	2.8	1	0.6%	0.2	15	2.9%	3.0
19-24	98	27.2%	19.5	17	11.0%	3.4	115	22.3%	22.9
25-44	181	50.3%	11.9	79	51.0%	5.2	260	50.5%	17.1
45-64	62	17.2%	3.8	53	34.2%	3.3	115	22.3%	7.1
65+	4	1.1%	0.5	5	3.2%	0.6	9	1.7%	1.1
Total	360	100.0%	6.0	155	100.0%	2.6	515	100.0%	8.6

*HIV cases diagnosed during 2011 which remained HIV cases at the end of the year. Includes persons diagnosed in Missouri correctional facilities.
**AIDS cases initially diagnosed in 2011.
***The sum of newly diagnosed HIV cases and newly diagnosed AIDS cases. Does not include cases diagnosed prior to 2011 with HIV, which progressed to AIDS in 2011.
****Per 100,000 population based on 2010 MDHSS estimates.
‡Based on age as of December 31, 2011.
Note: Percentages may not total due to rounding.

Of the 11,138 persons living with HIV at the end of 2011, 83% were males (Table 1). The rate of those living with HIV disease was 5.0 times greater among males than females. Although whites represented the largest proportion of living HIV disease cases (50%), the rate of those living with HIV disease was 6.3 times greater among blacks/African Americans than whites. The rate was 1.8 times greater among Hispanics than whites. Among males, the rate of living cases was 5.5 times greater for blacks/African Americans than whites, and 1.6 times greater for Hispanics than whites. Among females, the rate of those living with HIV disease was 13.3 times greater among blacks/African Americans than whites, and 2.9 times greater among Hispanics than whites.

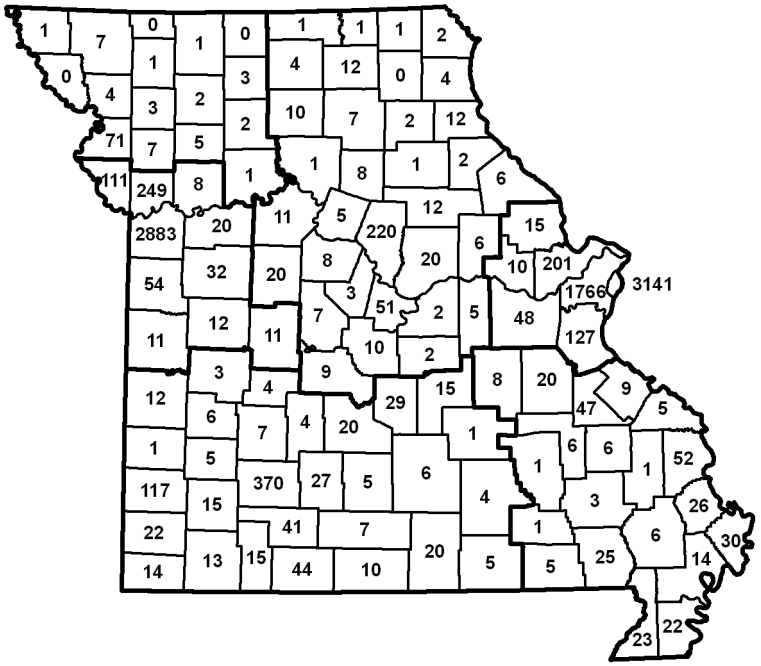
Of the 515 persons newly diagnosed with HIV disease in 2011, 30% were classified as AIDS cases by the end of 2011 (Table 2). The rate of new HIV disease diagnoses was 5.7 times greater among males than females. The rate of new HIV disease cases was 8.6 times greater among blacks/African Americans than whites, and 3.2 times greater in Hispanics than whites. The rate of new HIV disease diagnoses was greatest among persons 19-24 years of age at the end of 2011 (22.9 per 100,000).

Figure 7. Distribution of new HIV disease cases by age at diagnosis and living HIV disease cases by current age in selected year, Missouri, 2002 and 2011



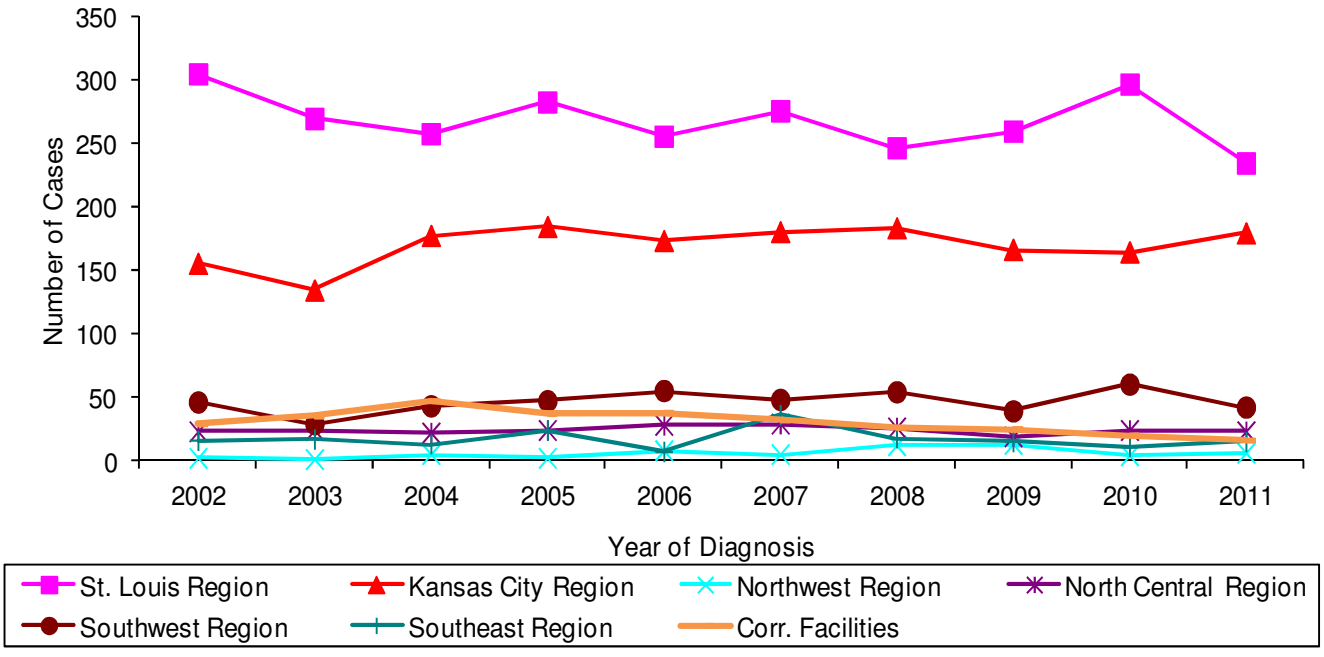
Changes have occurred in the distribution of the age at diagnosis among new HIV disease cases over time (Figure 7). In 2002, the greatest proportions of new diagnoses occurred among those ages 30-34 (19%) and 35-39 (22%). In 2011, the greatest proportion of new diagnoses occurred among those ages 19-24 (23%). Although the age of new diagnoses has decreased, the age of individuals living with HIV has increased over time. In 2002, the greatest proportions of living cases were among those ages 35-39 (22%) and 40-44 (22%). In 2010, the greatest proportion of living cases was between 45-49 years old (20%).

Figure 8. Number of persons living with HIV disease by county of residence* and HIV region at time of diagnosis, Missouri, 1982-2011



*Based on residence at time of most recent diagnosis of HIV or AIDS. Excludes persons diagnosed in Missouri correctional facilities (n=714).

Figure 9. Persons diagnosed with HIV disease by HIV region at time of diagnosis, Missouri, 2002-2011



The largest numbers of persons living with HIV disease in 2011 were most recently diagnosed in St. Louis City (3,141), Jackson County (2,883) and St. Louis County (1,766) (Figure 8). The St. Louis HIV region has represented the largest number of new HIV disease diagnoses in each year from 2002-2011 (Figure 9). In the St. Louis HIV region, the 234 new diagnoses in 2011 represented the lowest number of new diagnoses reported in the region since 1987.

The number of new diagnoses in the Kansas City region has been generally stable from 2004 to 2011. In the remainder of the HIV regions, the number of new diagnoses has been generally stable from 2002 to 2011, with slight fluctuations seen in select years.

Table 3. New and living HIV and AIDS cases and rates, by geographic area, and by HIV region, Missouri, 2011

	HIV Cases						AIDS Cases					
	Diagnosed 2011*			Living with HIV			Diagnosed 2011**			Living with AIDS		
Location	Cases	%	Rate***	Cases	%	Rate***	Cases	%	Rate***	Cases	%	Rate***
Geograhic Area												
St. Louis City†	94	26.1%	29.4	1,490	28.7%	466.7	28	18.1%	8.8	1,651	27.8%	517.1
St. Louis County†	60	16.7%	6.0	854	16.4%	85.5	37	23.9%	3.7	912	15.4%	91.3
Kansas City†	98	27.2%	21.3	1,180	22.7%	256.6	36	23.2%	7.8	1,544	26.0%	335.8
Outstate†	94	26.1%	2.2	1,343	25.8%	31.9	52	33.5%	1.2	1,450	24.4%	34.4
Missouri Correctional Facilities††	14	3.9%	N/A	333	6.4%	N/A	2	1.3%	N/A	381	6.4%	N/A
Total	360	100.0%	6.0	5,200	100.0%	86.8	155	100.0%	2.6	5,938	100.0%	99.1
HIV Region												
St. Louis HIV Region†	164	45.6%	7.9	2,551	49.1%	122.4	70	45.2%	3.4	2,757	46.4%	132.3
Kansas City HIV Region†	125	34.7%	10.0	1,491	28.7%	119.0	54	34.8%	4.3	1,900	32.0%	151.7
Northwest HIV Region†	2	0.6%	0.8	48	0.9%	19.3	4	2.6%	1.6	60	1.0%	24.2
North Central HIV Region†	16	4.4%	2.1	220	4.2%	29.0	7	4.5%	0.9	245	4.1%	32.3
Southwest HIV Region†	29	8.1%	2.5	418	8.0%	36.5	13	8.4%	1.1	424	7.1%	37.0
Southeast HIV Region†	10	2.8%	2.0	139	2.7%	27.8	5	3.2%	1.0	171	2.9%	34.2
Missouri Correctional Facilities††	14	3.9%	N/A	333	6.4%	N/A	2	1.3%	N/A	381	6.4%	N/A
MISSOURI	**360**	**100.0%**	**6.0**	**5,200**	**100.0%**	**86.8**	**155**	**100.0%**	**2.6**	**5,938**	**100.0%**	**99.1**

*HIV cases diagnosed and reported to the Department during 2011 which remained HIV cases at the end of the year.
**Does not include HIV cases diagnosed prior to 2011 that progressed to AIDS in 2011.
***Per 100,000 population based on 2010 MDHSS estimates.
†Does not include persons diagnosed in Missouri correctional facilities.
††Includes persons diagnosed in Missouri correctional facilities.
Note: Percentages may not total due to rounding.

There were differences in the proportion of persons newly diagnosed with HIV disease that were either concurrently diagnosed with AIDS or progressed to AIDS at the end of 2011 by geographic area and HIV region (Table 3). In Outstate and St. Louis County, 36% and 38% of newly diagnosed HIV disease cases progressed to AIDS at the end of 2011, respectively. In comparison, the proportion was 27%, 23%, and 13% for Kansas City, St. Louis City, and Missouri correctional facilities, respectively. In the Northwest HIV region, 67% of newly diagnosed HIV disease cases progressed to AIDS at the end of 2011. Whereas the proportion was 33%, 31%, 30%, 30%, 30%, and 13% for the HIV regions of Southeast, Southwest, St. Louis, Kansas City, North Central, and Missouri correctional facilities, respectively. The variation in the proportion of newly diagnosed individuals that progressed to AIDS by the end of 2011 among the geographic areas may be related to differences in when individuals were tested in the course of their disease progression, or differences in active surveillance techniques.

The rates of new and living HIV and AIDS cases were greatest in St. Louis City (Table 3). The rate of new HIV case diagnoses was 13.4 times higher in St. Louis City compared to Outstate, and 9.7 times higher in Kansas City than Outstate. The rate of new AIDS case diagnoses was 7.3 times higher in St. Louis City compared to Outstate, and 6.5 times higher in Kansas City than Outstate. This demonstrates the disproportionate impact of HIV disease on the major metropolitan areas in Missouri.

Table 4. Diagnosed HIV cases and rates, by selected race/ethnicity, by geographic area, Missouri, 2011

Area	White			Black/African American			Hispanic			Total		
	Cases	%	Rate*	Cases	%	Rate*	Cases	%	Rate*	Cases**	%	Rate*
St. Louis City†	35	37.2%	26.0	55	58.5%	35.2	2	2.1%	18.0	94	100.0%	29.4
St. Louis County†	11	18.3%	1.6	48	80.0%	20.7	0	0.0%	0.0	60	100.0%	6.0
Kansas City†	31	31.6%	12.3	59	60.2%	43.4	6	6.1%	13.1	98	100.0%	21.3
Outstate Missouri†	64	68.1%	1.7	22	23.4%	13.5	8	8.5%	6.1	94	100.0%	2.2
Missouri Correctional Facilities††	2	14.3%	N/A	11	78.6%	N/A	1	7.1%	N/A	14	100.0%	N/A
MISSOURI TOTAL	**143**	**39.7%**	**2.9**	**195**	**54.2%**	**28.4**	**17**	**4.7%**	**8.0**	**360**	**100.0%**	**6.0**

*Per 100,000 population based on 2010 MDHSS estimates.
**Includes cases in persons whose race/ethnicity is either unknown or not listed.
†Does not include persons diagnosed in Missouri correctional facilities.
††Includes persons diagnosed in Missouri correctional facilities.
Note: Row percentages are shown. Percentages may not total due to rounding.

Table 5. Diagnosed HIV cases and rates, by selected race/ethnicity, by HIV region, Missouri, 2011

Area	White			Black/African American			Hispanic			Total		
	Cases	%	Rate*	Cases	%	Rate*	Cases	%	Rate*	Cases**	%	Rate*
St. Louis HIV Region†	54	32.9%	3.5	105	64.0%	25.8	2	1.2%	3.8	164	100.0%	7.9
Kansas City HIV Region†	44	35.2%	4.7	69	55.2%	37.7	10	8.0%	12.2	125	100.0%	10.0
Northwest HIV Region†	1	50.0%	0.4	1	50.0%	13.0	0	0.0%	0.0	2	100.0%	0.8
North Central HIV Region†	13	81.3%	1.9	2	12.5%	5.2	1	6.3%	5.0	16	100.0%	2.1
Southwest HIV Region†	24	82.8%	2.3	2	6.9%	9.8	3	10.3%	7.1	29	100.0%	2.5
Southeast HIV Region†	5	50.0%	1.1	5	50.0%	16.4	0	0.0%	0.0	10	100.0%	2.0
Missouri Correctional Facilities††	2	14.3%	N/A	11	78.6%	N/A	1	7.1%	N/A	14	100.0%	N/A
MISSOURI TOTAL	**143**	**39.7%**	**2.9**	**195**	**54.2%**	**28.4**	**17**	**4.7%**	**8.0**	**360**	**100.0%**	**6.0**

*Per 100,000 population based on 2010 MDHSS estimates.
**Includes cases in persons whose race/ethnicity is either unknown or not listed.
†Does not include persons diagnosed in Missouri correctional facilities.
††Includes persons diagnosed in Missouri correctional facilities.
Note: Row percentages are shown. Percentages may not total due to rounding.

The proportion of new HIV cases diagnosed in 2011 by race/ethnicity varied by geographic area (Table 4). Whites comprised 68% of new HIV case diagnoses in 2011 in Outstate, but only 18% of new HIV cases in St. Louis County. Differences in the general population distribution of each of these geographic areas likely explain the variation observed. The difference in the rate of new HIV case diagnoses by race/ethnicity also varied by geographic area. In Outstate, the rate of new HIV cases was 7.9 times greater among blacks/African Americans than whites, and 3.6 times greater among Hispanics than whites. In comparison, the rate of new HIV cases was only 1.4 times greater in blacks/African Americans than whites, and the rate was lower for Hispanics than whites in St. Louis City.

Similar patterns observed for the geographic areas were also present by HIV region (Table 5). In the Southwest HIV region, whites represented 83% of new HIV case diagnoses. Whereas whites represented only 33% of new HIV cases in the St. Louis HIV region.

Table 6. Newly diagnosed and living HIV and AIDS cases in men who have sex with men, by selected race/ethnicity, Missouri, 2011

	HIV Cases*				AIDS Cases			
	Newly Diagnosed		Living		Newly Diagnosed**		Living	
Race/Ethnicity	Cases	%	Cases	%	Cases	%	Cases	%
White	103	46.0%	1777	56.8%	52	51.5%	2095	57.4%
Black/African American	108	48.2%	1180	37.7%	39	38.6%	1371	37.6%
Hispanic	11	4.9%	128	4.1%	8	7.9%	133	3.6%
Other/Unknown	2	0.9%	41	1.3%	2	2.0%	51	1.4%
MISSOURI TOTAL* **	**224**	**100.0%**	**3,126**	**100.0%**	**101**	**100.0%**	**3,650**	**100.0%**

*Remained HIV cases at the end of the year.
**Does not include HIV cases diagnosed prior to 2011 that progressed to AIDS in 2011.
***Totals include persons diagnosed in Missouri correctional facilities.
Note: Percentages may not total due to rounding.

Table 7. Living HIV disease cases in men who have sex with men, by selected race/ethnicity, by current age group, Missouri, 2011

	White		Black/African American		Hispanic		Total*	
Age Group	Cases	%**	Cases	%**	Cases	%**	Cases	%**
13-18	1	0.0%	12	0.5%	0	0.0%	14	0.2%
19-24	77	2.0%	280	11.0%	8	3.1%	377	5.6%
25-44	1324	34.2%	1192	46.7%	146	55.9%	2706	39.9%
45-64	2285	59.0%	1023	40.1%	102	39.1%	3443	50.8%
65+	185	4.8%	44	1.7%	5	1.9%	236	3.5%
MISSOURI TOTAL	**3,872**	**100.0%**	**2,551**	**100.0%**	**261**	**100.0%**	**6,776**	**100.0%**

*Row totals and percentages include cases in persons whose race/ethnicity is either unknown or not listed. Totals include persons diagnosed in Missouri correctional facilities.
**Percentage of cases per age group.
Note: Percentages may not total due to rounding.

The data presented for each exposure category for Tables 6-19 have not been adjusted to redistribute individuals with missing exposure category information. Therefore these data only represent those individuals with an exposure category reported to MDHSS. The total number of individuals in each exposure category is likely underestimated, especially among those newly diagnosed in 2011. These data are subject to change.

There were a total of 325 new HIV disease diagnoses attributed to men who have sex with men (MSM) in 2011 (Table 6). Blacks/African Americans and whites represented a nearly equal proportion of new HIV cases among MSM; whites represented the greatest proportion of new AIDS cases among MSM. Whites represented a larger proportion of MSM living with both HIV and AIDS compared to blacks/African Americans. Of the newly diagnosed cases among MSM, 31% progressed to AIDS by the end of 2011. Hispanics represented the greatest proportion of cases that progressed to AIDS in 2011 (42%).

The distribution of living HIV disease cases by current age varied by race/ethnicity among MSM (Table 7). Among white MSM living with HIV disease, the majority (59%) were between 45-64 years of age at the end of 2011. In contrast, only 40% of living black/African American MSM and 39% of living Hispanic MSM with HIV disease were between 45-64 years of age. The greatest numbers of black/African American and Hispanic MSM living with HIV disease were between 25-44 years of age at the end of 2011. Black/African American MSM represented the largest number of individuals living with HIV who were less than 25 years of age at the end of 2011 (292).

Table 8. Living HIV disease cases in men who have sex with men, by selected race/ethnicity, by geographic area, by HIV region, Missouri, 2011

	White		Black/African American		Hispanic		Total*	
Geographic Area	**Cases**	**%****	**Cases**	**%****	**Cases**	**%****	**Cases**	**%*****
St. Louis City	1,021	50.3%	942	46.4%	38	1.9%	2,030	30.0%
St. Louis County	505	46.1%	538	49.1%	40	3.7%	1,095	16.2%
Kansas City	1,000	54.8%	679	37.2%	111	6.1%	1,825	26.9%
Outstate	1,247	83.0%	176	11.7%	64	4.3%	1,503	22.2%
Missouri Correctional Facilities	99	30.7%	216	66.9%	8	2.5%	323	4.8%
MISSOURI TOTAL	**3,872**	**57.1%**	**2,551**	**37.6%**	**261**	**3.9%**	**6,776**	**100.0%**
HIV Region								
St. Louis Region	1,726	51.4%	1,509	44.9%	81	2.4%	3,359	49.6%
Kansas City Region	1,307	59.1%	726	32.9%	137	6.2%	2,210	32.6%
Northwest Region	55	93.2%	3	5.1%	1	1.7%	59	0.9%
North Central Region	180	75.0%	46	19.2%	12	5.0%	240	3.5%
Southwest Region	393	88.3%	27	6.1%	19	4.3%	445	6.6%
Southeast Region	112	80.0%	24	17.1%	3	2.1%	140	2.1%
Missouri Correctional Facilities	99	30.7%	216	66.9%	8	2.5%	323	4.8%
MISSOURI TOTAL	**3,872**	**57.1%**	**2,551**	**37.6%**	**261**	**3.9%**	**6,776**	**100.0%**

*Row totals and percentages include cases in persons whose race/ethnicity is either unknown or not listed. Missouri totals include persons diagnosed in Missouri correctional facilities.
**Percentage of race/ethnicity in each area/region.
***Percentage of cases per area/region.
Note: Percentages may not total due to rounding.

Of the 6,776 MSM living with HIV disease at the end of 2011, the largest proportion were diagnosed in St. Louis City (30%), followed by Kansas City (27%) (Table 8). There were differences in the proportion of living HIV disease cases among MSM diagnosed in each geographic area by race/ethnicity. In Outstate Missouri, 83% of persons living with HIV disease attributed to MSM were white. Whereas only 31% of MSM living with HIV disease who were diagnosed in Missouri correctional facilities were white. The differences were likely due to variations in the general population of the geographic areas.

Similar patterns were also seen for the HIV regions. The St. Louis HIV region represented 50% of all living cases among MSM and the Kansas City HIV region comprised 33%. The proportion of white living cases among MSM was highest in the Northwest HIV region and lowest in Missouri correctional facilities.

Table 9. Newly diagnosed and living HIV and AIDS cases in men who have sex with men and inject drugs, by selected race/ethnicity, Missouri, 2011

	HIV Cases*				AIDS Cases			
	Newly Diagnosed		Living		Newly Diagnosed**		Living	
Race/Ethnicity	Cases	%	Cases	%	Cases	%	Cases	%
White	6	60.0%	137	66.2%	1	50.0%	237	64.6%
Black/African American	4	40.0%	61	29.5%	1	50.0%	115	31.3%
Hispanic	0	0.0%	7	3.4%	0	0.0%	11	3.0%
Other/Unknown	0	0.0%	2	1.0%	0	0.0%	4	1.1%
MISSOURI TOTAL* **	**10**	**100.0%**	**207**	**100.0%**	**2**	**100.0%**	**367**	**100.0%**

*Remained HIV cases at the end of the year.
**Does not include HIV cases diagnosed prior to 2011 that progressed to AIDS in 2011.
***Totals include persons diagnosed in Missouri correctional facilities.
Note: Percentages may not total due to rounding.

Table 10. Living HIV disease cases in men who have sex with men and inject drugs, by selected race/ethnicity, by current age group, Missouri, 2011

	White		Black/African American		Hispanic		Total*	
Age Group	Cases	%**	Cases	%**	Cases	%**	Cases	%**
13-18	0	0.0%	0	0.0%	0	0.0%	0	0.0%
19-24	7	1.9%	3	1.7%	0	0.0%	10	1.7%
25-44	116	31.0%	53	30.1%	11	61.1%	182	31.7%
45-64	239	63.9%	117	66.5%	6	33.3%	366	63.8%
65+	12	3.2%	3	1.7%	1	5.6%	16	2.8%
MISSOURI TOTAL	**374**	**100.0%**	**176**	**100.0%**	**18**	**100.0%**	**574**	**100.0%**

*Row totals and percentages include cases in persons whose race/ethnicity is either unknown or not listed. Totals include persons diagnosed in Missouri correctional facilities.
**Percentage of cases per age group.
Note: Percentages may not total due to rounding.

There were a total of 12 new HIV disease diagnoses attributed to men who have sex with men and inject drugs (MSM/IDU) in 2011 (Table 9). The small number of new cases diagnosed among MSM/IDU make patterns by race/ethnicity and sex difficult to interpret. Although based on a small number of cases, 17% of newly diagnosed cases progressed to AIDS by the end of 2011. Whites represented the majority (60%) of new HIV cases among MSM/IDU. Among living HIV and AIDS cases, whites represented the largest proportion of cases, 66% and 65%, respectively.

The distribution of living HIV disease cases by current age varied by race/ethnicity among MSM/IDU (Table 10). Among white and black/African American MSM/IDU living with HIV disease, the majority, 64% and 67%, were between 45-64 years of age at the end of 2011. In contrast, only 33% of living Hispanic MSM/IDU with HIV disease were between 45-64 years of age. The greatest proportion of Hispanic MSM/IDU living with HIV disease were between 25-44 years of age at the end of 2011.

Table 11. Living HIV disease cases in men who have sex with men and inject drugs, by selected race/ethnicity, by geographic area, by HIV region, Missouri, 2011

	White		Black/African American		Hispanic		Total*	
Geographic Area	**Cases**	**%****	**Cases**	**%****	**Cases**	**%****	**Cases**	**%*****
St. Louis City	42	42.4%	54	54.5%	2	2.0%	99	17.2%
St. Louis County	29	60.4%	19	39.6%	0	0.0%	48	8.4%
Kansas City	103	64.4%	41	25.6%	11	6.9%	160	27.9%
Outstate	167	89.3%	15	8.0%	5	2.7%	187	32.6%
Missouri Correctional Facilities	33	41.3%	47	58.8%	0	0.0%	80	13.9%
MISSOURI TOTAL	**374**	**65.2%**	**176**	**30.7%**	**18**	**3.1%**	**574**	**100.0%**
HIV Region								
St. Louis Region	81	50.9%	74	46.5%	3	1.9%	159	27.7%
Kansas City Region	139	70.2%	43	21.7%	11	5.6%	198	34.5%
Northwest Region	10	100.0%	0	0.0%	0	0.0%	10	1.7%
North Central Region	23	79.3%	4	13.8%	2	6.9%	29	5.1%
Southwest Region	71	92.2%	4	5.2%	2	2.6%	77	13.4%
Southeast Region	17	81.0%	4	19.0%	0	0.0%	21	3.7%
Missouri Correctional Facilities	33	41.3%	47	58.8%	0	0.0%	80	13.9%
MISSOURI TOTAL	**374**	**65.2%**	**176**	**30.7%**	**18**	**3.1%**	**574**	**100.0%**

*Row totals and percentages include cases in persons whose race/ethnicity is either unknown or not listed. Missouri totals include persons diagnosed in Missouri correctional facilities.
**Percentage of race/ethnicity in each area/region.
***Percentage of cases per area/region.
Note: Percentages may not total due to rounding.

Of the 574 MSM/IDU living with HIV disease at the end of 2011, the largest proportion was diagnosed in Outstate Missouri (33%), followed by Kansas City (28%) (Table 11). There were differences in the proportion of living HIV disease cases among MSM/IDU diagnosed in each geographic area by race/ethnicity. In Outstate Missouri, 89% of living cases attributed to MSM/IDU were white. Whereas only 41% of living cases diagnosed in Missouri correctional facilities among MSM/IDU were white.

The Kansas City HIV region represented 35% of all living cases among MSM/IDU, and the St. Louis HIV region comprised 28%. The proportion of white living cases among MSM/IDU was highest in the Northwest HIV region (100%) and lowest in Missouri correctional facilities (41%).

Table 12. Newly diagnosed and living HIV and AIDS cases in injecting drug users, by selected race/ethnicity and sex, Missouri, 2011

	HIV Cases*				AIDS Cases			
	Newly Diagnosed		Living		Newly Diagnosed**		Living	
Race/Ethnicity and Sex	Cases	%	Cases	%	Cases	%	Cases	%
White Male	2	20.0%	80	33.8%	5	71.4%	106	26.3%
Black/African American Male	3	30.0%	65	27.4%	0	0.0%	143	35.5%
Hispanic Male	1	10.0%	4	1.7%	1	14.3%	13	3.2%
White Female	2	20.0%	54	22.8%	0	0.0%	56	13.9%
Black/African American Female	2	20.0%	30	12.7%	1	14.3%	73	18.1%
Hispanic Female	0	0.0%	1	0.4%	0	0.0%	8	2.0%
MISSOURI TOTAL* **	**10**	**100.0%**	**237**	**100.0%**	**7**	**100.0%**	**403**	**100.0%**

*Remained HIV cases at the end of the year.
**Does not include HIV cases diagnosed prior to 2011 that progressed to AIDS in 2011.
***Totals include cases in persons whose race/ethnicity is either unknown or not listed. Totals include persons diagnosed in Missouri correctional facilities.
Note: Percentages may not total due to rounding.

Table 13. Living HIV disease cases in injecting drug users, by selected race/ethnicity and sex, by current age group, Missouri, 2011

	White Males		Black/African American Males		White Females		Black/African American Females		Total*	
Age Group	Cases	%**	Cases	%**	Cases	%**	Cases	%**	Cases	%**
13-18	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
19-24	2	1.1%	1	0.5%	5	4.5%	0	0.0%	10	1.6%
25-44	57	30.6%	46	22.1%	43	39.1%	38	36.9%	194	30.3%
45-64	119	64.0%	153	73.6%	62	56.4%	60	58.3%	411	64.2%
65+	8	4.3%	8	3.8%	0	0.0%	5	4.9%	25	3.9%
MISSOURI TOTAL	**186**	**100.0%**	**208**	**100.0%**	**110**	**100.0%**	**103**	**100.0%**	**640**	**100.0%**

*Row totals and percentages include cases in persons whose race/ethnicity is either unknown or not listed. Totals include persons diagnosed in Missouri correctional facilities.
**Percentage of cases per age group.
Note: Percentages may not total due to rounding.

There were a total of 17 new HIV disease diagnoses attributed to IDU in 2011 (Table 12). The small number of new cases diagnosed among IDU make patterns by race/ethnicity and sex difficult to interpret. Of the newly diagnosed cases among IDU, 41% progressed to AIDS by the end of 2011. Males represented approximately 65% of all living HIV disease cases among IDU. There were not significant differences in the proportion of living cases among IDU attributed to males between individuals classified as HIV cases versus AIDS cases. There were differences in the distribution of living cases by race/ethnicity and sex among IDU between those classified as HIV cases compared to those classified as AIDS cases. Among living IDU HIV cases, white males represented the largest proportion of cases (34%). In comparison, black/African American males represented the largest proportion (36%) of living AIDS cases among IDU.

The greatest numbers of persons living with HIV disease in each race/ethnicity and sex category presented among IDU were 45 to 64 years of age at the end of 2011 (Table 13). The proportion of living HIV disease cases between the ages of 25 and 44 was greatest among white females.

Table 14. Living HIV disease cases in injecting drug users, by selected race/ethnicity, by geographic area, by HIV region, Missouri, 2011

	White		Black/African American		Hispanic		Total*	
Geographic Area	**Cases**	**%****	**Cases**	**%****	**Cases**	**%****	**Cases**	**%*****
St. Louis City	18	14.0%	108	83.7%	2	1.6%	129	20.2%
St. Louis County	21	42.0%	27	54.0%	1	2.0%	50	7.8%
Kansas City	49	32.5%	89	58.9%	11	7.3%	151	23.6%
Outstate	158	81.0%	29	14.9%	7	3.6%	195	30.5%
Missouri Correctional Facilities	50	43.5%	58	50.4%	5	4.3%	115	18.0%
MISSOURI TOTAL	**296**	**46.3%**	**311**	**48.6%**	**26**	**4.1%**	**640**	**100.0%**
HIV Region								
St. Louis Region	68	32.7%	135	64.9%	3	1.4%	208	32.5%
Kansas City Region	79	41.8%	94	49.7%	14	7.4%	189	29.5%
Northwest Region	5	71.4%	2	28.6%	0	0.0%	7	1.1%
North Central Region	20	71.4%	8	28.6%	0	0.0%	28	4.4%
Southwest Region	61	82.4%	8	10.8%	4	5.4%	74	11.6%
Southeast Region	13	68.4%	6	31.6%	0	0.0%	19	3.0%
Missouri Correctional Facilities	50	43.5%	58	50.4%	5	4.3%	115	18.0%
MISSOURI TOTAL	**296**	**46.3%**	**311**	**48.6%**	**26**	**4.1%**	**640**	**100.0%**

*Row totals and percentages include cases in persons whose race/ethnicity is either unknown or not listed. Missouri totals include persons diagnosed in Missouri correctional facilities.
**Percentage of race/ethnicity in each area/region.
***Percentage of cases per area/region.
Note: Percentages may not total due to rounding.

Of the 640 IDU living with HIV disease at the end of 2011, the largest proportion was diagnosed in Outstate Missouri (31%), followed by Kansas City (24%) (Table 14). There were differences in the proportion of living HIV disease cases among IDU diagnosed in each geographic area by race/ethnicity. In Outstate Missouri, 81% of living cases attributed to IDU were white. Whereas only 14% of living cases diagnosed in St. Louis City among IDU were white. The differences are likely due to variations in the general population of the geographic areas. Blacks/African Americans represented a larger proportion of living HIV disease cases among IDU (49%) compared to MSM (38%) and MSM/IDU (31%).

The St. Louis HIV region represented 33% of all living cases among IDU, and the Kansas City HIV region comprised 30%. The proportion of white living cases among IDU was highest in the Southwest HIV region (82%) and lowest in the St. Louis HIV region (33%).

Table 15. Newly diagnosed and living HIV and AIDS cases in heterosexual contacts, by selected race/ethnicity and sex, Missouri, 2011

	HIV Cases*				AIDS Cases			
	Newly Diagnosed		Living		Newly Diagnosed**		Living	
Race/Ethnicity and Sex	Cases	%	Cases	%	Cases	%	Cases	%
White Male	1	2.9%	58	8.0%	0	0.0%	50	6.0%
Black/African American Male	4	11.4%	105	14.5%	8	53.3%	164	19.7%
Hispanic Male	0	0.0%	2	0.3%	1	6.7%	10	1.2%
White Female	8	22.9%	199	27.5%	3	20.0%	191	23.0%
Black/African American Female	20	57.1%	322	44.5%	3	20.0%	385	46.3%
Hispanic Female	1	2.9%	21	2.9%	0	0.0%	16	1.9%
MISSOURI TOTAL* **	**35**	**100.0%**	**723**	**100.0%**	**15**	**100.0%**	**831**	**100.0%**

*Remained HIV cases at the end of the year.
**Does not include HIV cases diagnosed prior to 2011 that progressed to AIDS in 2011.
***Total includes cases in persons whose race/ethnicity is either unknown or not listed. Totals include persons diagnosed in Missouri correctional facilities.
Note: Percentages may not total due to rounding.

Table 16. Living HIV disease cases in heterosexual contacts, by selected race/ethnicity and sex, by current age group, Missouri, 2011

	White Males		Black/African American Males		White Females		Black/African American Females		Total*	
Age Group	Cases	%**	Cases	%**	Cases	%**	Cases	%**	Cases	%**
13-18	0	0.0%	0	0.0%	0	0.0%	4	0.6%	4	0.3%
19-24	0	0.0%	8	3.0%	3	0.8%	24	3.4%	36	2.3%
25-44	27	25.0%	127	47.2%	191	49.0%	429	60.7%	822	52.9%
45-64	67	62.0%	122	45.4%	173	44.4%	237	33.5%	627	40.3%
65+	14	13.0%	12	4.5%	23	5.9%	13	1.8%	65	4.2%
MISSOURI TOTAL	**108**	**100.0%**	**269**	**100.0%**	**390**	**100.0%**	**707**	**100.0%**	**1,554**	**100.0%**

*Row totals and percentages include cases in persons whose race/ethnicity is either unknown or not listed. Totals include persons diagnosed in Missouri correctional facilities.
**Percentage of cases per age group.
Note: Percentages may not total due to rounding.

There were a total of 50 new HIV disease diagnoses attributed to heterosexual contact in 2011 (Table 15). Black/African American females represented the largest number of new HIV disease diagnoses among heterosexuals. The small number of newly diagnosed cases make patterns by race/ethnicity and sex difficult to interpret. Although based on a small number of cases, 30% of newly diagnosed cases progressed to AIDS by the end of 2011. Females represented 77% of living HIV cases and 73% of living AIDS cases among heterosexual contact cases. The distribution by race/ethnicity and sex among living heterosexual contact cases was similar between those classified as HIV cases and AIDS cases.

For all race/ethnicity and sex categories among heterosexual contact cases, except white males, the greatest proportion of living cases was between 25-44 years of age (Table 16). This was different than the distributions observed among the other exposure categories, where the majority of individuals were currently between 45-64 years of age. The difference was likely related to the fact that heterosexual contact cases were diagnosed more recently, on average, compared to persons in other exposure categories, and that persons who attributed their infection to heterosexual contact were generally younger at the time of diagnosis than persons in other exposure categories.

Table 17. Living HIV disease cases in heterosexual contacts, by selected race/ethnicity, by geographic area, by HIV region, Missouri, 2011

	White		Black/African American		Hispanic		Total*	
Geographic Area	**Cases**	**%****	**Cases**	**%****	**Cases**	**%****	**Cases**	**%*****
St. Louis City	71	14.5%	402	82.4%	11	2.3%	488	31.4%
St. Louis County	65	22.4%	209	72.1%	9	3.1%	290	18.7%
Kansas City	59	24.4%	165	68.2%	11	4.5%	242	15.6%
Outstate	284	66.2%	117	27.3%	17	4.0%	429	27.6%
Missouri Correctional Facilities	19	18.1%	83	79.0%	1	1.0%	105	6.8%
MISSOURI TOTAL	**498**	**32.0%**	**976**	**62.8%**	**49**	**3.2%**	**1,554**	**100.0%**
HIV Region								
St. Louis Region	177	21.2%	621	74.5%	22	2.6%	833	53.6%
Kansas City Region	106	34.4%	177	57.5%	17	5.5%	308	19.8%
Northwest Region	9	64.3%	5	35.7%	0	0.0%	14	0.9%
North Central Region	53	60.9%	26	29.9%	3	3.4%	87	5.6%
Southwest Region	93	72.7%	27	21.1%	5	3.9%	128	8.2%
Southeast Region	41	51.9%	37	46.8%	1	1.3%	79	5.1%
Missouri Correctional Facilities	19	18.1%	83	79.0%	1	1.0%	105	6.8%
MISSOURI TOTAL	**498**	**32.0%**	**976**	**62.8%**	**49**	**3.2%**	**1,554**	**100.0%**

*Row totals and percentages include cases in persons whose race/ethnicity is either unknown or not listed. Missouri totals include persons diagnosed in Missouri correctional facilities.
**Percentage of race in each area/region.
***Percentage of cases per area/region.
Note: Percentages may not total due to rounding.

Of the 1,554 living cases among heterosexual contacts at the end of 2011, the largest proportion was diagnosed in St. Louis City (31%); the next highest was Outstate Missouri (28%) (Table 17). There were differences in the proportion of living HIV disease cases among heterosexuals diagnosed in each geographic area by race/ethnicity. In Outstate, 66% of living cases attributed to heterosexual contact were white. Whereas only 15% of living cases diagnosed in St. Louis City among heterosexual contact cases were white. The differences are likely due to variations in the general population of the geographic areas. Blacks/African Americans represented a larger proportion of living HIV disease cases among heterosexual contact cases (63%) compared to all other exposure categories, primarily due to the large number of black/African American females reporting heterosexual contact as their primary mode of exposure.

The St. Louis HIV region represented 54% of all living cases among heterosexuals, and the Kansas City HIV region comprised 20%. The proportion of white living cases among heterosexuals was highest in the Southwest HIV region (73%) and lowest in Missouri correctional facilities (18%).

Table 18. Deaths* among HIV cases, by mode of transmission, by selected race and sex, Missouri, 1982—2011

	White Males		Black/African American Males		White Females		Black/African American Females		Total**	
Mode of Transmission	**Cases**	**%**	**Cases**	**%**	**Cases**	**%**	**Cases**	**%**	**Cases**	**%**
MSM	170	62.5%	121	57.3%	0	0.0%	0	0.0%	297	50.6%
MSM/IDU	39	14.3%	14	6.6%	0	0.0%	0	0.0%	56	9.5%
IDU	24	8.8%	30	14.2%	7	22.6%	17	33.3%	82	14.0%
Heterosexual Contact	4	1.5%	17	8.1%	14	45.2%	25	49.0%	61	10.4%
No Indicated Risk (NIR)	28	10.3%	28	13.3%	10	32.3%	8	15.7%	82	14.0%
MISSOURI TOTAL* **	**272**	**100.0%**	**211**	**100.0%**	**31**	**100.0%**	**51**	**100.0%**	**587**	**100.0%**

*May or may not be due to HIV-related illnesses.
**Totals include cases in persons whose race/ethnicity is either unknown or not listed.
***Total (numbers and percentages) include 9 cases (1.5%) with a mode of transmission not indicated on the table, such as hemophilia/ coagulation disorder, blood transfusion or tissue recipient, etc. Totals include persons diagnosed in Missouri correctional facilities.
Note: Percentages may not total due to rounding.

Table 19. Deaths* among AIDS cases, by mode of transmission, by selected race and sex, Missouri, 1982—2011

	White Males		Black/African American Males		White Females		Black/African American Females		Total**	
Mode of Transmission	**Cases**	**%**	**Cases**	**%**	**Cases**	**%**	**Cases**	**%**	**Cases**	**%**
MSM	3,181	78.1%	1,218	68.5%	0	0.0%	0	0.0%	4,519	67.7%
MSM/IDU	404	9.9%	197	11.1%	0	0.0%	0	0.0%	615	9.2%
IDU	168	4.1%	168	9.5%	76	29.0%	99	26.1%	533	8.0%
Heterosexual Contact	65	1.6%	80	4.5%	134	51.1%	233	61.5%	521	7.8%
No Indicated Risk (NIR)	103	2.5%	92	5.2%	25	9.5%	25	6.6%	261	3.9%
MISSOURI TOTAL* **	**4,075**	**100.0%**	**1,777**	**100.0%**	**262**	**100.0%**	**379**	**100.0%**	**6,679**	**100.0%**

*May or may not be due to AIDS-related illnesses.
**Totals include cases in persons whose race/ethnicity is either unknown or not listed.
***Total (numbers and percentages) include 230 cases (3.4%) with a mode of transmission not indicated on the table, such as hemophilia/ coagulation disorder, blood transfusion or tissue recipient, etc. Totals include persons diagnosed in Missouri correctional facilities.
Note: Percentages may not total due to rounding.

The number of deaths that have occurred among persons still classified as HIV cases at the time of death was small (587) in comparison to the number of deaths among persons classified as AIDS (6,679) (Tables 18 and 19). The greatest proportion of deaths among HIV cases have occurred among white males (46%) (Table 18). There were differences in the distribution of deaths among HIV cases by mode of transmission among the race/ ethnicity and sex categories. Among males, the majority of deaths among HIV cases have been attributed to MSM. Among female HIV cases, the largest number of deaths occurred among cases attributed to heterosexual contact. Similar patterns were observed for deaths among male AIDS cases (Table 19). Among both white and black/African American female AIDS cases, cases attributed to heterosexual contact represented the majority of deaths. The proportion of deaths among those with no indicated risk among AIDS cases was smaller than among HIV cases, likely because there was more time to obtain exposure category information.

Table 20. Newly diagnosed and living HIV and AIDS cases with exposure category assignments for Missouri, 2011

Exposure category	HIV cases				AIDS cases			
	2011*		Living		2011**		Living	
Adult/Adolescent								
Men who have sex with men	273	76.0%	3,596	70.0%	119	76.8%	3,982	67.4%
Men who have sex with men and inject drugs	12	3.3%	236	4.6%	2	1.3%	398	6.7%
Injecting drug use	13	3.6%	290	5.6%	10	6.5%	466	7.9%
Heterosexual contact	61	17.0%	1,001	19.5%	24	15.5%	1,021	17.3%
Hemophilia/coagulation disorder	0	0.0%	12	0.2%	0	0.0%	35	0.6%
Blood transfusion or tissue recipient	0	0.0%	3	0.1%	0	0.0%	7	0.1%
No indicated risk (NIR)	-----	-------	-----	-------	-----	-------	-----	-------
ADULT/ADOLESCENT SUBTOTAL	**359**	**100.0%**	**5,140** †	**100.0%**	**155**	**100.0%**	**5,910** †	**100.0%**
Pediatric (<13 years old)								
PEDIATRIC SUBTOTAL	**1**	**100.0%**	**60**	**100.0%**	**0**	**0.0%**	**28**	**100.0%**
TOTAL	**360**		**5,200**		**155**		**5,938**	

*HIV cases reported during 2011 which remained HIV cases at the end of the year.
**Does not include HIV cases diagnosed prior to 2011 that progressed to AIDS in 2011.
†Includes 2 cases with a confirmed "other" exposure category among persons living with HIV and 1 case among persons living with AIDS.
Note: Percentages may not total due to rounding.

The data in Table 20 have been adjusted to proportionately re-distribute individuals with no indicated risk factor based on sex and race/ethnicity to known exposure categories. These data do not reflect the true counts of persons reported in each exposure category. Among both new and living HIV and AIDS cases, MSM represented the greatest proportion of cases. The proportion of MSM cases was greater for new HIV and AIDS cases compared to the proportion among their respective living cases. This may indicate changes in how individuals are being infected over time. However, the observed pattern may also be related to the method used to re-distribute those with unknown risks. The method used to re-distribute new cases may weight those with no indicated risk more heavily to the MSM category. There was one new HIV cases diagnosed among a child less than 13 years of age in 2011.

The majority of HIV disease cases diagnosed in 2011 (94%) and those living with HIV disease (93%) were residents of a metropolitan area at the time of diagnosis (Table 21). For a list of counties that were classified as a metropolitan area refer to the Appendix. There were differences in the proportion of new and living HIV disease cases by sex based on the population of the area of residence. The proportion of males living with HIV disease decreased as the population of the area of residence decreased. Whereas 83% of living HIV disease cases in metropolitan areas occurred among males, only 72% of living cases in nonmetropolitan areas were among males. There were differences in the distribution of new and living HIV disease cases by race/ethnicity based on the population of the area of residence. For both new and living HIV disease cases, as the population of the area of residence became smaller, the proportion of cases that occurred among whites increased. For example, only 41% of new HIV disease diagnoses were among whites in metropolitan areas. But in nonmetropolitan areas whites comprised 78% of new diagnoses. There were also differences based on the population of area of residence in the distribution of living HIV disease cases by exposure category. As the population of the area of residence decreased, the proportion of cases attributed to MSM decreased. Among those living with HIV disease, the proportion of cases diagnosed between 25-44 years of age decreased as the population of the area of residence decreased. The proportion of living cases diagnosed between 45-64 years of age increased as the population of the area of residence decreased.

Table 21. Newly diagnosed and living HIV disease* cases, by population of area of residence at time of diagnosis, by sex, by race/ethnicity, by exposure category and age at diagnosis, Missouri, 2011†

	Newly Diagnosed						Living					
	Metropolitan Area**		Micropolitan Area***		Nonmetropolitan Area****		Metropolitan Area**		Micropolitan Area***		Nonmetropolitan Area****	
	Cases	%	Cases	%	Cases	%	Cases	%	Cases	%	Cases	%
Sex												
Male	398	85.2%	17	73.9%	7	77.8%	8,080	83.2%	289	74.7%	234	71.6%
Female	69	14.8%	6	26.1%	2	22.2%	1,630	16.8%	98	25.3%	93	28.4%
Total	467	100.0%	23	100.0%	9	100.0%	9,710	100.0%	387	100.0%	327	100.0%
Race/Ethnicity												
White	190	40.7%	16	69.6%	7	77.8%	4,823	49.7%	286	73.9%	252	77.1%
Black/African American	242	51.8%	6	26.1%	2	22.2%	4,337	44.7%	83	21.4%	59	18.0%
Hispanic	28	6.0%	1	4.3%	0	0.0%	397	4.1%	14	3.6%	14	4.3%
Other/Unknown	7	1.5%	0	0.0%	0	0.0%	153	1.6%	4	1.0%	2	0.6%
Total	467	100.0%	23	100.0%	9	100.0%	9,710	100.0%	387	100.0%	327	100.0%
Exposure Category												
Men who have sex with men	303	64.9%	9	39.1%	5	55.6%	6,136	63.2%	175	45.2%	142	43.4%
Men who have sex with men and inject drugs	10	2.1%	1	4.3%	0	0.0%	445	4.6%	31	8.0%	18	5.5%
Injecting drug use	14	3.0%	0	0.0%	0	0.0%	469	4.8%	29	7.5%	27	8.3%
Heterosexual contact	42	9.0%	6	26.1%	1	11.1%	1,285	13.2%	81	20.9%	83	25.4%
No Indicated Risk (NIR)	97	20.8%	7	30.4%	3	33.3%	1,258	13.0%	59	15.2%	45	13.8%
Other	0	0.0%	0	0.0%	0	0.0%	46	0.5%	4	1.0%	5	1.5%
Pediatric	1	0.2%	0	0.0%	0	0.0%	71	0.7%	8	2.1%	7	2.1%
Total	467	100.0%	23	100.0%	9	100.0%	9,710	100.0%	387	100.0%	327	100.0%
Age at Diagnosis												
<2	1	0.2%	0	0.0%	0	0.0%	44	0.5%	5	1.3%	4	1.2%
2-12	0	0.0%	0	0.0%	0	0.0%	20	0.2%	2	0.5%	3	0.9%
13-18	18	3.9%	1	4.3%	2	22.2%	260	2.7%	7	1.8%	11	3.4%
19-24	113	24.2%	3	13.0%	0	0.0%	1,349	13.9%	42	10.9%	31	9.5%
25-44	227	48.6%	11	47.8%	4	44.4%	6,453	66.5%	253	65.4%	196	59.9%
45-64	101	21.6%	7	30.4%	3	33.3%	1,537	15.8%	77	19.9%	78	23.9%
65+	7	1.5%	1	4.3%	0	0.0%	47	0.5%	1	0.3%	4	1.2%
Total	467	100.0%	23	100.0%	9	100.0%	9,710	100.0%	387	100.0%	327	100.0%

*Includes all individuals diagnosed with the HIV virus, regardless of current status (i.e., HIV or AIDS)
†Does not include persons diagnosed in Missouri correctional facilities.
**A metropolitan area contains a core urban area with a population of at least 50,000. It also includes adjacent counties that have a high degree of social and economic integration with the core urban area. Based on 2008 US Census estimates. See Appendix for map of included counties.
***A micropolitan area contains a core urban area with a population between 10,000-49,999. It also includes adjacent counties that have a high degree of social and economic integration with the core urban area. Based on 2008 US Census estimates. See Appendix for map of included counties.
****An area that does not meet the population requirements for the metropolitan or micropolitan area. Based on 2008 US Census estimates. See Appendix for map of included counties.

Figure 10. Length of time between HIV and AIDS diagnosis, by race/ethnicity, Missouri, 2002-2010

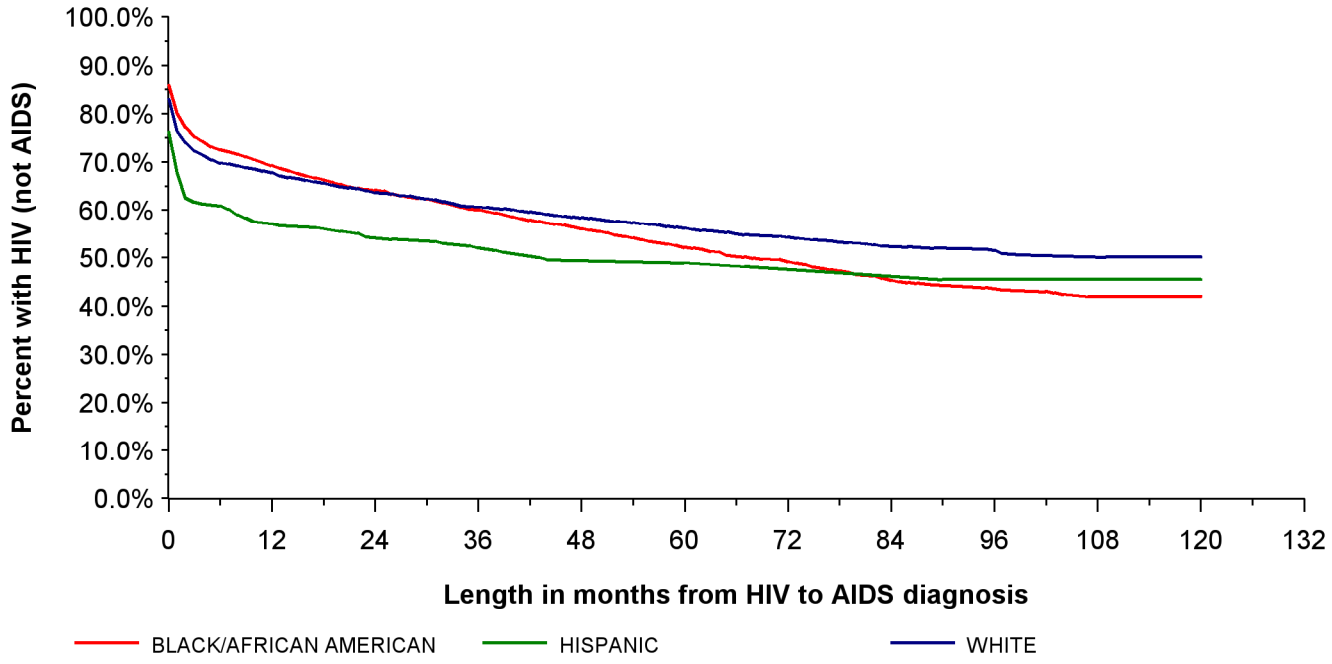
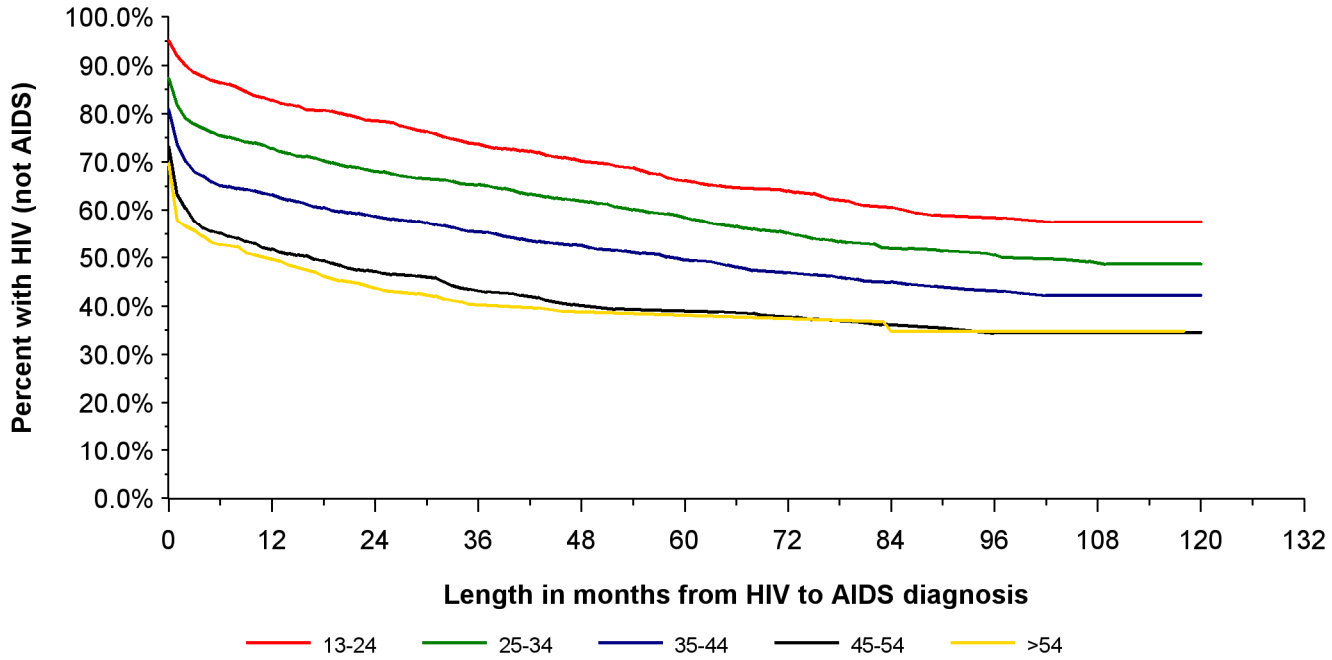


Figure 11. Length of time between HIV and AIDS diagnosis, by age at diagnosis*, Missouri, 2002-2010



*Age at earliest diagnosis of HIV disease, regardless of disease progression.

A greater proportion of Hispanics progressed from HIV to AIDS within 12 months of their HIV diagnosis compared to whites and blacks/African Americans (Figure 10). It is important to note that for all curves displayed, data in the later months should be interpreted with caution as they are based on small numbers.

There were differences in the progression from HIV to AIDS by the age at HIV diagnosis (Figure 11). Over time, the proportion of cases that progressed to AIDS remained higher as the age at initial HIV diagnosis increased.

Figure 12. Length of time between HIV and AIDS diagnosis, by mode of transmission, Missouri, 2002-2010

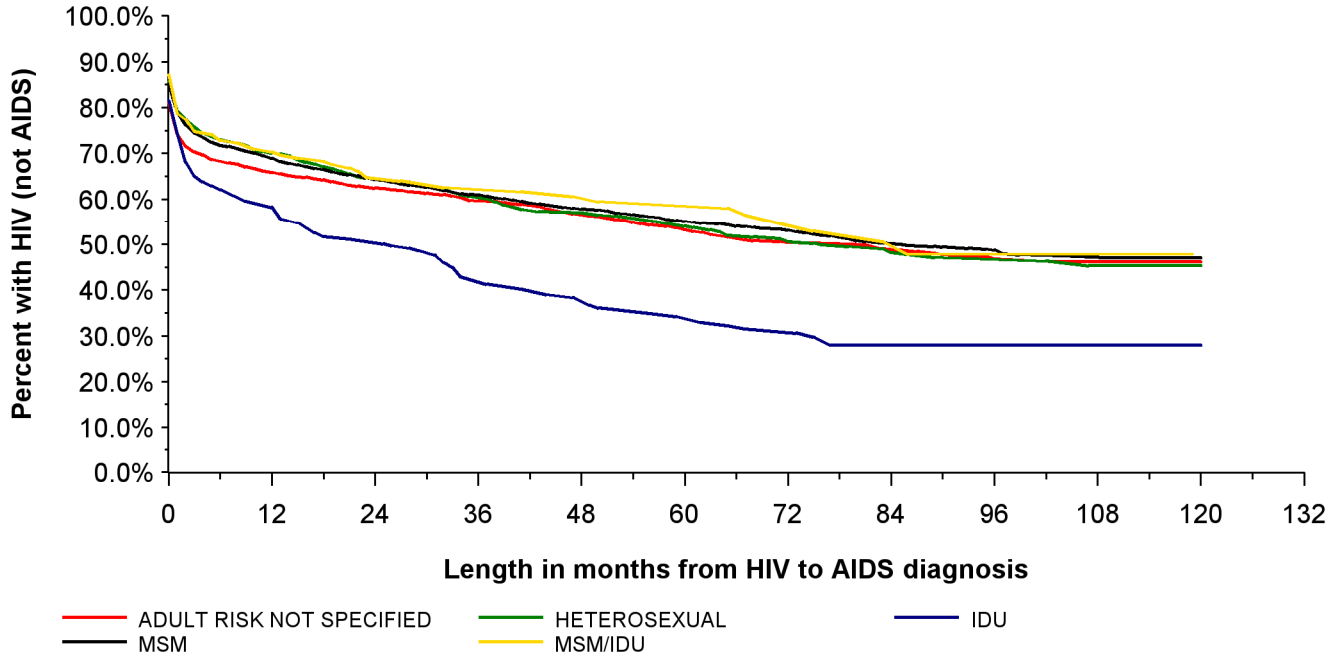
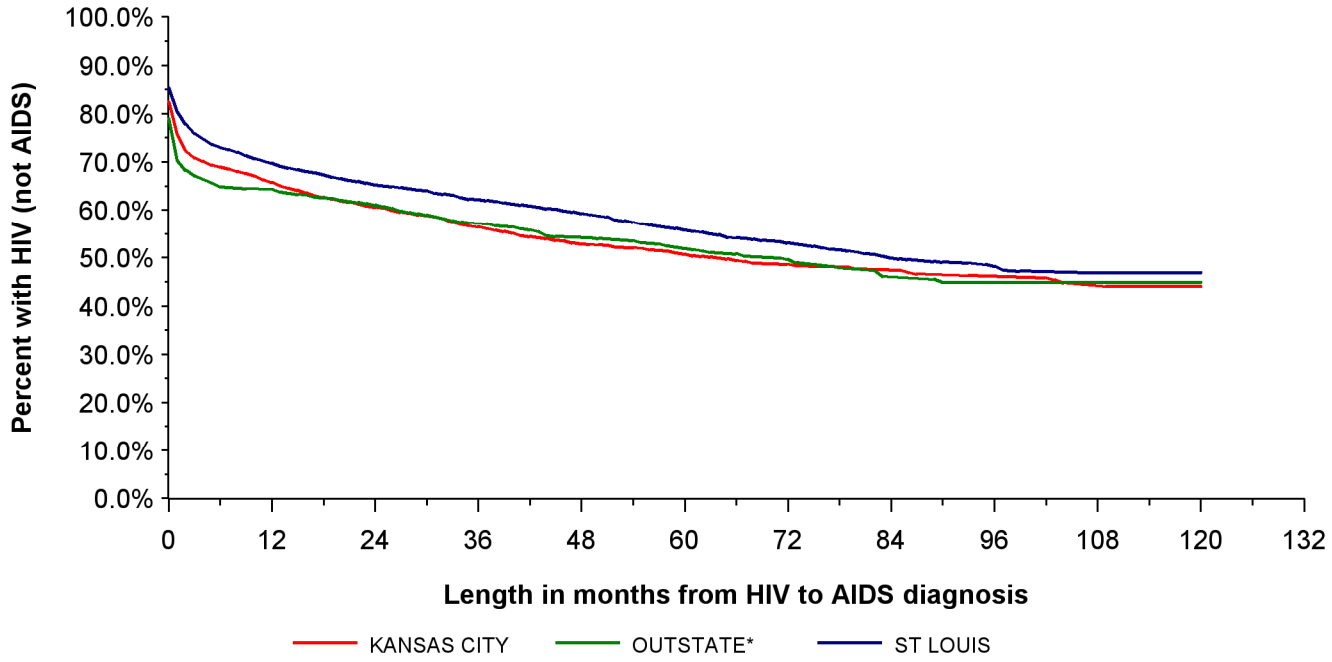


Figure 13. Length of time between HIV and AIDS diagnosis, by HIV region*, Missouri, 2002-2010



*Outstate includes the North Central, Northwest, Southeast, and Southwest HIV regions

A greater proportion of IDU progressed from HIV to AIDS within 12 months of their HIV diagnosis compared to individuals from all other exposure categories (Figure 12). Around 96 months after the initial HIV diagnosis, the proportion of cases that progressed to AIDS remained higher for IDU compared with other exposure categories.

There were differences in the progression from HIV to AIDS by HIV region (Figure 13). The proportion of individuals that progressed to AIDS over time was generally greater for the Kansas City HIV region and all Outstate HIV regions combined compared to the St. Louis HIV region. Differences observed among the regions may be attributed in part to differences in the routine monitoring and reporting of CD4 counts and other active surveillance techniques.

Figure 14. Length of time between HIV diagnosis and death, by race/ethnicity, Missouri, 2002-2010

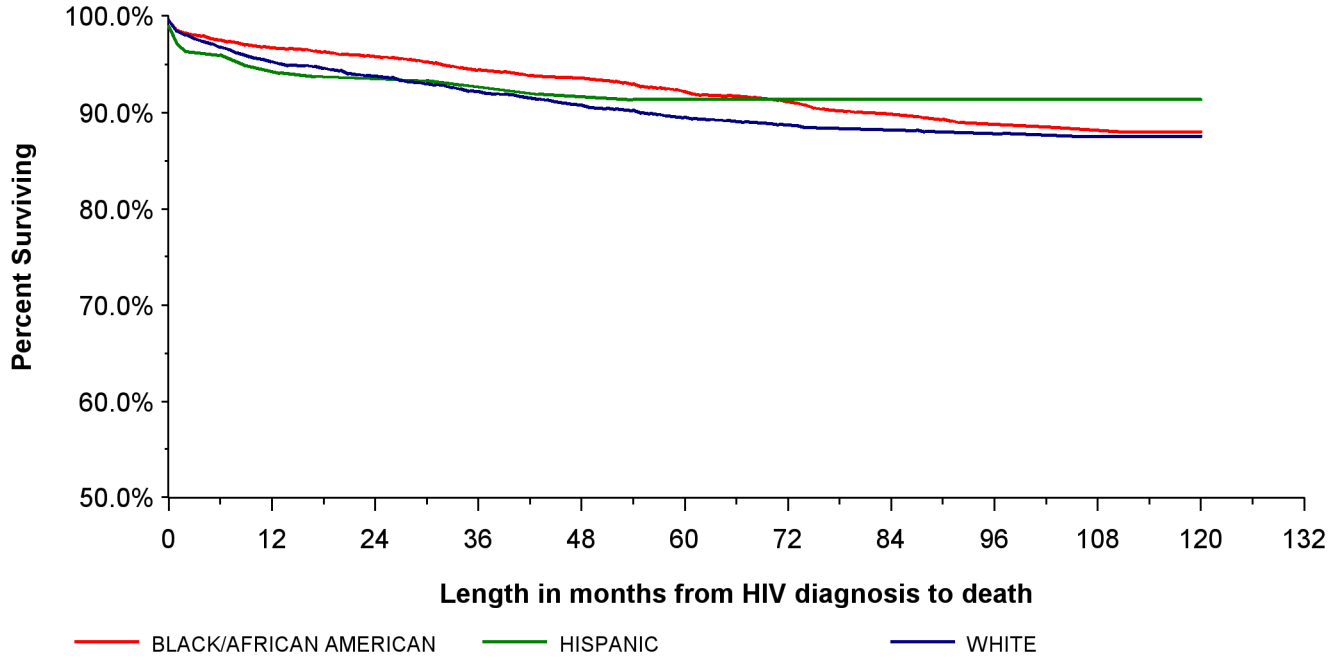
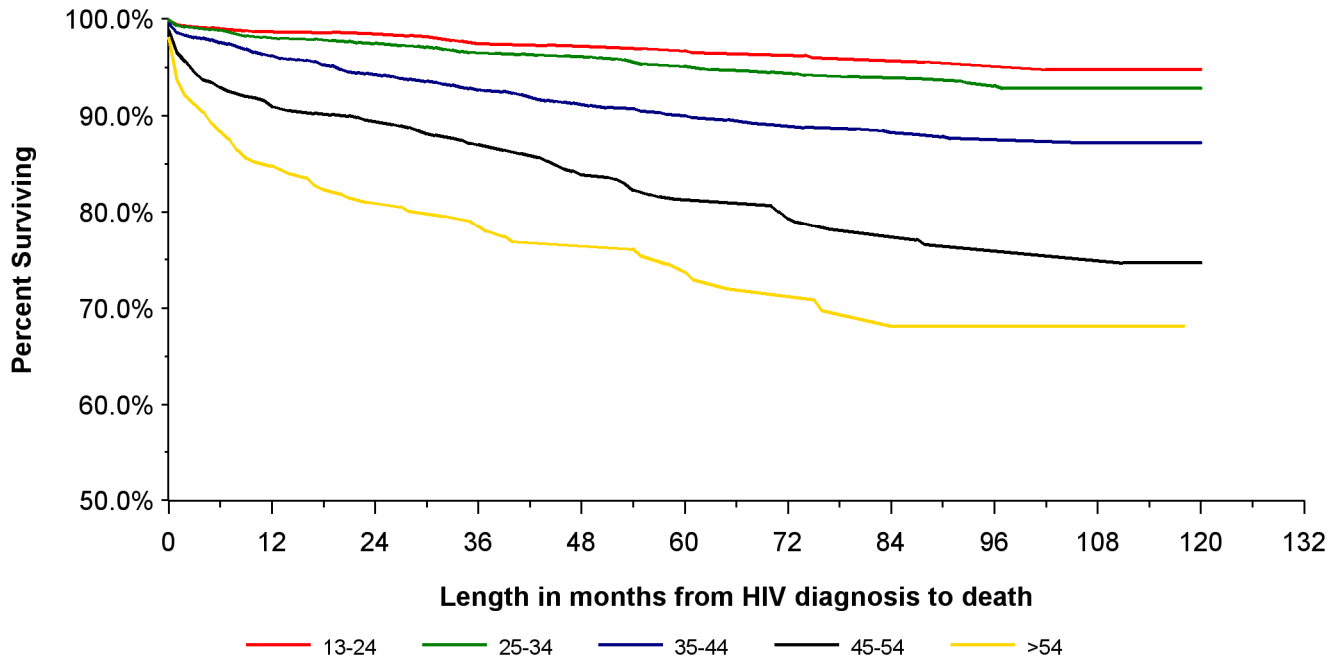


Figure 15. Length of time between HIV diagnosis and death, by age at diagnosis*, Missouri, 2002-2010



*Age at earliest diagnosis of HIV disease, regardless of disease progression.

The length of time between the initial HIV diagnosis and reported death was similar by race/ethnicity (Figure 14). Five years following the initial HIV diagnosis 90% of all individuals were still living.

There were differences in the length of time between HIV diagnosis and death by the age at HIV diagnosis (Figure 15). Over time, the proportion of cases that were deceased was higher as the age at initial HIV diagnosis increased. For example, 72 months following the initial diagnosis 97% of individuals diagnosed between 13-24 years of age were still living, compared to only 72% of individuals diagnosed at greater than 54 years of age.

Figure 16. Length of time between HIV diagnosis and death, by mode of transmission, Missouri, 2002-2010

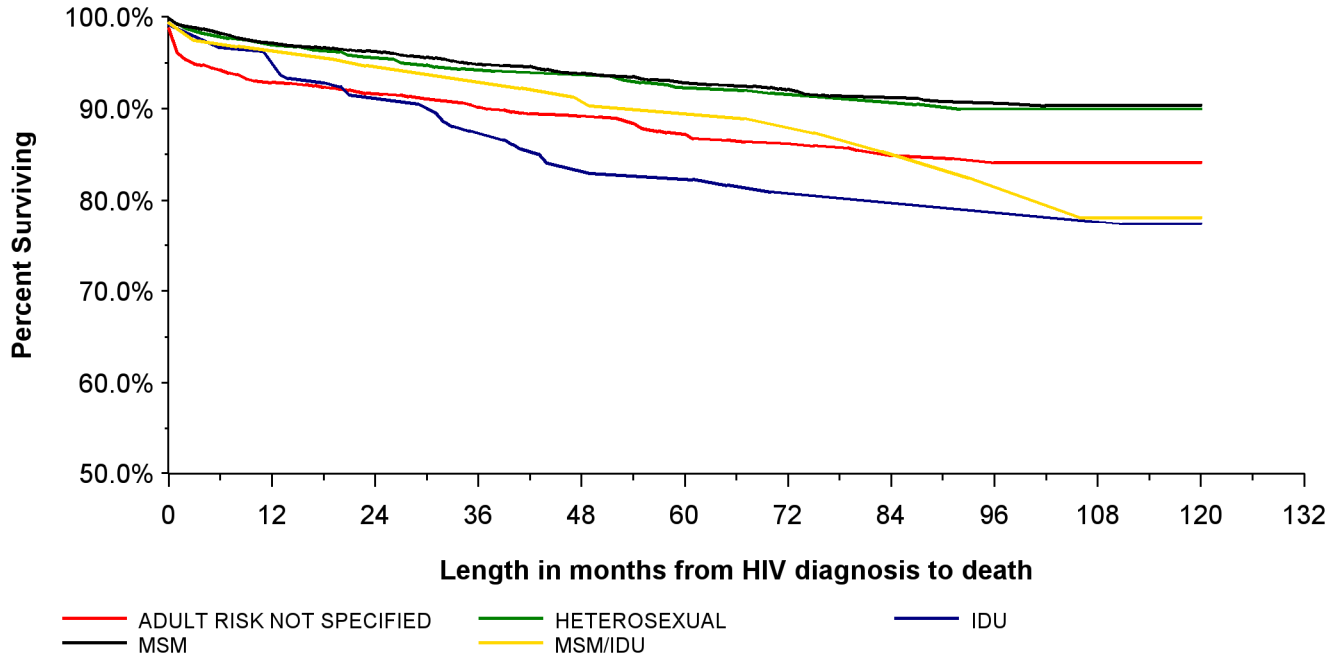
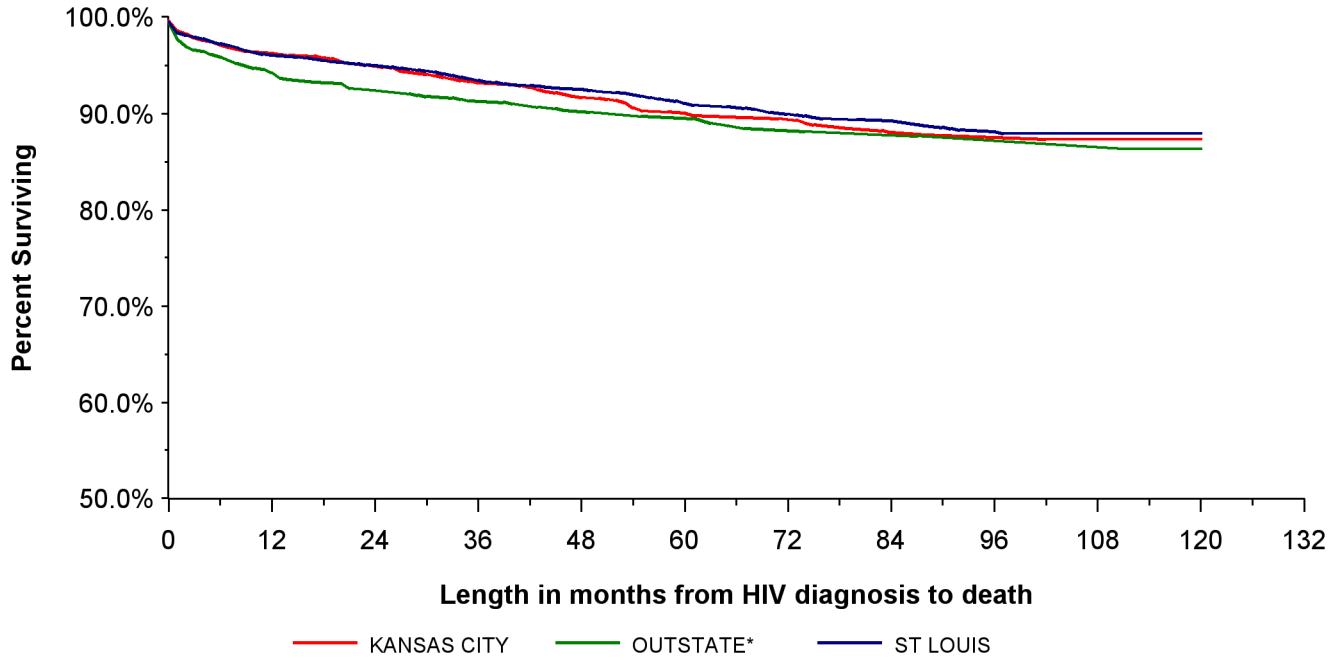


Figure 17. Length of time between HIV diagnosis and death, by HIV region*, Missouri, 2002-2010



*Outstate includes the North Central, Northwest, Southeast, and Southwest HIV regions

A greater proportion of IDU and those with no reported risk were deceased within 36 months of their HIV diagnosis compared to individuals from all other exposure categories (Figure 16). Differences in survival persisted over time.

There were not differences in survival following HIV diagnosis by HIV region (Figure 17). At 24 months following the initial HIV diagnosis, the proportion still living was 95%, 95%, and 92% for the St. Louis HIV region, Kansas City HIV region, and all other Outstate HIV regions combined.

Table 22. Initial CD4 and viral load values† among adults and adolescents newly diagnosed with HIV disease, Missouri, 2009-2010

Viral Load (copies/mL)	CD4 Count (cells/µL)											
	No Test		<200		200-350		351-500		>500		Total	
	N	%*	N	%*	N	%*	N	%*	N	%*	N	%**
No Test	149	13.4%	10	0.9%	8	0.7%	7	0.6%	3	0.3%	177	15.9%
0-10,000	98	8.8%	42	3.8%	34	3.1%	46	4.1%	93	8.4%	313	28.2%
10,001-100,000	97	8.7%	82	7.4%	60	5.4%	52	4.7%	81	7.3%	372	33.5%
>100,000	32	2.9%	143	12.9%	32	2.9%	27	2.4%	15	1.4%	249	22.4%
Total	376	33.8%	277	24.9%	134	12.1%	132	11.9%	192	17.3%	1,111	100.0%

†Within 12 months of the initial HIV diagnosis
* % of table total
**% of column total

Of persons newly diagnosed with HIV disease between 2009 and 2010, 13% did not have a CD4 or a viral load laboratory result reported to MDHSS within 12 months of diagnosis (Table 22). Nearly 25% of persons diagnosed between 2009 and 2010 had an initial CD4 count of less than 200 cells/µL. This indicates that a sizable proportion of individuals were being diagnosed at a later stage of disease progression, and likely were unaware of their infection for at least several years. This suggests greater emphasis is needed to establish routine HIV testing, so individuals are diagnosed within a shorter time period after becoming infected.

Table 23. Percent of adults and adolescents receiving at least one CD4 within 12 months of their HIV diagnosis and the median initial CD4 count, Missouri, 2009-2010

	Number	% with CD4 within 12 months of HIV diagnosis	Median of initial CD4 counts (cells/ µL)
HIV Status			
HIV (not AIDS)	738	53.3%	475
Concurrent HIV and AIDS diagnosis	231	97.4%	64
AIDS >1 month after HIV diagnosis	142	82.4%	169
Sex			
Male	915	64.6%	326
Female	196	73.5%	314
Race/Ethnicity			
White	457	73.1%	356
Black/African American	577	58.8%	298
Hispanic	48	87.5%	235
Other/Unknown	29	69.0%	350
Exposure Category			
MSM	706	63.6%	342
MSM/IDU	25	84.0%	432
IDU	35	85.7%	288
HRH	116	70.7%	312
Other	0	--	--
NIR	229	66.8%	182
Age at HIV Diagnosis			
13-18	56	64.3%	526
19-24	257	56.4%	357
25-44	565	65.8%	342
45-64	222	77.5%	162
65+	11	90.9%	35

The percent of adults and adolescents receiving at least one CD4 within 12 months of their HIV diagnosis and the median initial CD4 count varied by sex, race/ethnicity, exposure category, and age at HIV diagnosis (Table 23). Of adults and adolescents newly diagnosed between 2009 and 2010, a greater proportion of females had a CD4 within 12 months of diagnosis (74%) compared to males (65%). The initial median CD4 count tended to be greater for males (326 cells/µL) compared to females (314 cells/µL). A greater proportion of whites and Hispanics tended to have a CD4 count within 12 months of diagnosis compared to blacks/African Americans. Among those with a CD4 count within 12 months of diagnosis, the initial CD4 count tended to be lower among Hispanics (235 cells/µL) and blacks/African Americans (298 cells/ µL) compared to persons of another race or an unknown race (350 cells/µL) and whites (356 cells/µL). This suggests that minorities were not getting diagnosed until later in their disease progression compared to whites. Among exposure categories, MSM and heterosexual contact cases had a lower proportion of adults and adolescents receiving an initial CD4 within 12 months of diagnosis compared to persons with other known exposure categories. The initial median CD4 tended to be lower for IDU and persons with no indicated risk compared to all other exposure categories. The median initial CD4 count tended to decrease as the age at HIV diagnosis increased. These data may be beneficial when determining groups that should be targeted for new testing initiatives to identify individuals earlier in their disease progression.

This page was intentionally left blank.

Key Highlights: What are the indicators of HIV/AIDS infection risk in Missouri?

Primary and Secondary (P&S) Syphilis

- The number of reported P&S syphilis cases decreased from 152 cases in 2010 to 136 cases in 2011. The decrease observed was due to a decline in reported cases in all HIV regions except the Kansas City and Southeast HIV regions.
- The rate of reported cases was highest in St. Louis City (14 per 100,000).
- Blacks/African Americans were disproportionately impacted, with a case rate 8.8 times greater than whites.

Early Latent Syphilis

- The number of early latent syphilis cases decreased from 2010 (133 cases) to 2011 (124 cases). The decrease was seen in all HIV regions except for the North Central and Southeast regions.
- The number of reported cases in 2011 was highest in St. Louis City (42).
- Males represented the majority (89%) of reported early latent syphilis cases.
- The case rate was 7.8 times higher among blacks/African Americans than whites.

Gonorrhea

- The number of reported gonorrhea cases increased from 2010 (7,159 cases) to 2011 (7,802 cases). The number of reported gonorrhea cases was lower in 2011 compared to 2006 in all HIV regions except the Northwest HIV region.
- St. Louis City had the highest rate of reported gonorrhea cases at 611 per 100,000 persons.
- A larger proportion of reported gonorrhea cases was diagnosed between 15 and 19 years of age among black/African American females (37%) compared to white females (24%), black/African American males (22%), and white males (12%).

Chlamydia

- The number of reported chlamydia cases increased from 26,049 in 2010 to 27,887 in 2011. Similar trends were observed in all HIV regions.
- St. Louis City had the highest chlamydia rate in 2011 (1,454 per 100,000). Jackson County reported the second highest case rate of chlamydia (842 per 100,000).
- A larger proportion of reported chlamydia cases was diagnosed between 15 and 19 years old among black/African American females (41%), compared to white females (36%), black/African American males (28%), and white males (19%).

Hepatitis B

- The number of reported hepatitis B cases in Missouri increased by 30 cases from 2010 (451) to 2011 (481).
- St. Louis County had the greatest number of reported hepatitis B cases with 102 cases.
- Among females, the largest numbers of cases were 20-29 years of age, while among males the largest numbers of cases were 50-59 years old.

Hepatitis C

- There were 5,048 hepatitis C cases reported in Missouri in 2011.
- St. Louis City had the greatest number of reported hepatitis C cases with 823 cases
- Among both males and females, the largest numbers of cases were 50-59 years of age.

HIV, STD, Hepatitis, and Tuberculosis (TB) disease Co-infections

- There were 347 persons living with HIV who were reported with an STD in 2011.
- Of the 260 early syphilis cases reported in 2011, 40% were among individuals living with HIV. Only 2% of gonorrhea cases and less than 1% of chlamydia cases reported in 2011 were among individuals living with HIV.
- St. Louis residents represented 71% of all living HIV cases reported with multiple STD co-morbidities in 2011, 67% of those with a chlamydia co-morbidity, 61% of those with an early syphilis co-morbidity, and 61% of those with a gonorrhea co-morbidity.
- Although blacks/African Americans represented only 44% of living HIV disease cases, they represented 64% of individuals diagnosed with an STD co-morbidity.
- Of the 11,138 individuals living with HIV disease, 78 were reported with a hepatitis co-morbidity in 2011.
- Six percent of chronic hepatitis B cases and 1% of chronic hepatitis C cases reported in 2011 were among persons living with HIV disease.
- Of the 11,138 individuals living with HIV disease, seven were reported with TB disease in 2011.

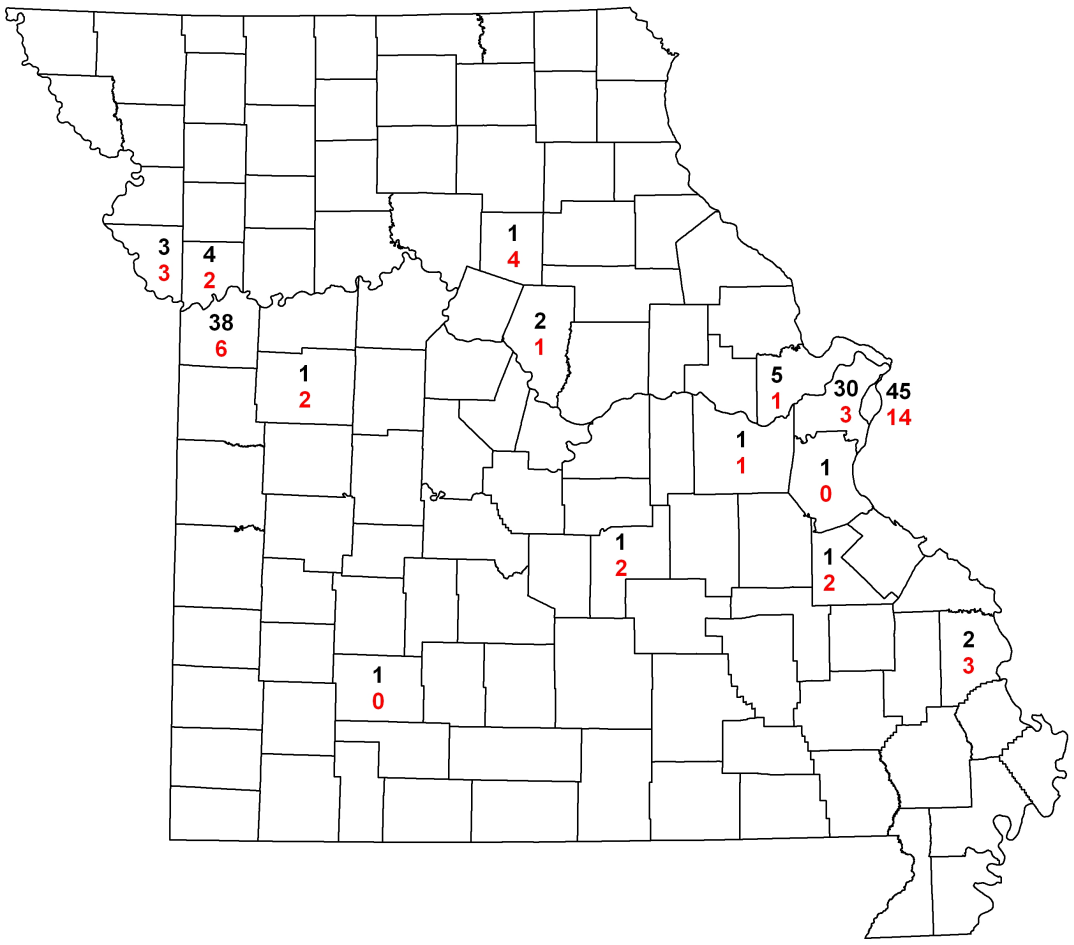
Table 24. Reported P&S syphilis cases and rates, by race*, by geographic region, by sex, Missouri, 2011

	Male			Female			Total	
	Cases	%	Rate**	Cases	%	Rate**	Cases	Rate**
Missouri								
White	55	42.3%	2.3	1	16.7%	0.0	56	1.2
Black/African American	69	53.1%	21.2	4	66.7%	1.1	73	10.6
Other/Unknown*	6	4.6%	--	1	16.7%	--	7	--
Total Cases	**130**	100.0%	4.4	**6**	100.0%	0.2	**136**	2.3
St. Louis Region								
White	25	31.3%	3.3	0	0.0%	0.0	25	1.6
Black/African American	51	63.8%	27.4	2	100.0%	0.9	53	13.0
Other/Unknown*	4	5.0%	--	0	0.0%	--	4	--
Total Cases	**80**	100.0%	8.0	**2**	100.0%	0.2	**82**	3.9
Kansas City Region								
White	23	54.8%	5.0	1	25.0%	0.2	24	2.6
Black/African American	18	42.9%	21.1	2	50.0%	2.1	20	10.9
Other/Unknown*	1	2.4%	--	1	25.0%	--	2	--
Total Cases	**42**	100.0%	6.9	**4**	100.0%	0.6	**46**	3.7
Northwest Region								
White	0	--	0.0	0	--	0.0	0	0.0
Black/African American	0	--	0.0	0	--	0.0	0	0.0
Other/Unknown*	0	--	--	0	--	--	0	--
Total Cases	**0**	--	0.0	**0**	--	0.0	**0**	0.0
North Central Region								
White	3	100.0%	0.9	0	--	0.0	3	0.4
Black/African American	0	0.0%	0.0	0	--	0.0	0	0.0
Other/Unknown*	0	0.0%	--	0	--	--	0	--
Total Cases	**3**	100.0%	0.8	**0**	--	0.0	**3**	0.4
Southwest Region								
White	2	100.0%	0.4	0	--	0.0	2	0.2
Black/African American	0	0.0%	0.0	0	--	0.0	0	0.0
Other/Unknown*	0	0.0%	--	0	--	--	0	--
Total Cases	**2**	100.0%	0.4	**0**	--	0.0	**2**	0.2
Southeast Region								
White	2	66.7%	0.9	0	--	0.0	2	0.4
Black/African American	0	0.0%	0.0	0	--	0.0	0	0.0
Other/Unknown*	1	33.3%	--	0	--	--	1	--
Total Cases	**3**	100.0%	1.2	**0**	--	0.0	**3**	0.6

*Includes cases identified with Hispanic ethnicity.
**Per 100,000 population based on 2010 MDHSS population estimates.

There were a total of 136 P&S syphilis cases reported in 2011 (Table 24). This represented a decrease from the 152 P&S syphilis cases reported in 2010. The majority of cases (96%) were reported among males. The rate of P&S syphilis cases among males was highest in the St. Louis HIV region (8.0), followed by the Kansas City HIV region (6.9). Sixty percent of all P&S syphilis cases were reported in the St. Louis HIV region and 34% were reported in the Kansas City HIV region. The rate of reported P&S syphilis cases was higher for blacks/African Americans compared to whites in all regions that reported P&S syphilis cases among blacks/African Americans. Between 2010 and 2011, the number of reported P&S syphilis cases increased from 38 to 46 in the Kansas City HIV Region and from 1 to 3 in the Southeast HIV region. In all other HIV regions the number of reported P&S syphilis cases decreased from 2010 to 2011.

Figure 18. Reported P&S syphilis cases* and rates, by county, Missouri, 2011**



*Case counts are in black.
**Case rates are in red, per 100,000 population based on 2010 MDHSS population estimates.

P&S syphilis cases were concentrated in metropolitan areas (Figure 18). There were 100 counties that did not report any P&S syphilis cases in 2011. St. Louis City had the highest rate of reported P&S syphilis cases at 14 per 100,000 persons. This means that for every 100,000 persons living in St. Louis City, there were 14 reported with P&S syphilis in 2011.

Figure 19. Reported P&S syphilis cases, by race and sex, by age group at diagnosis, Missouri, 2011

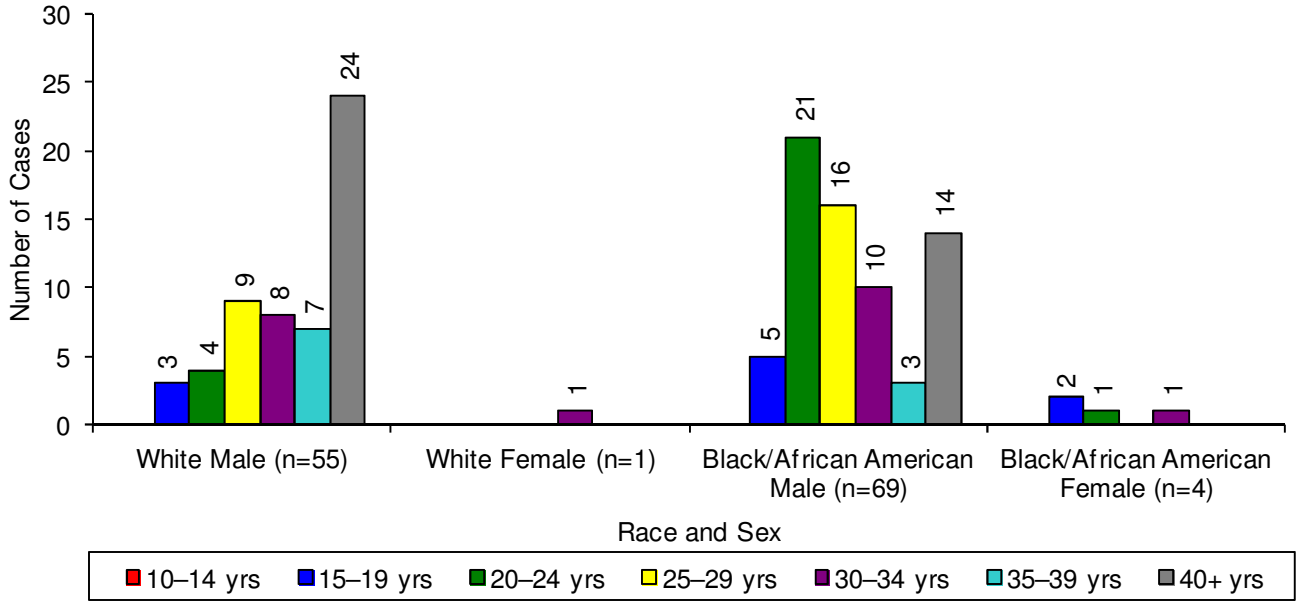
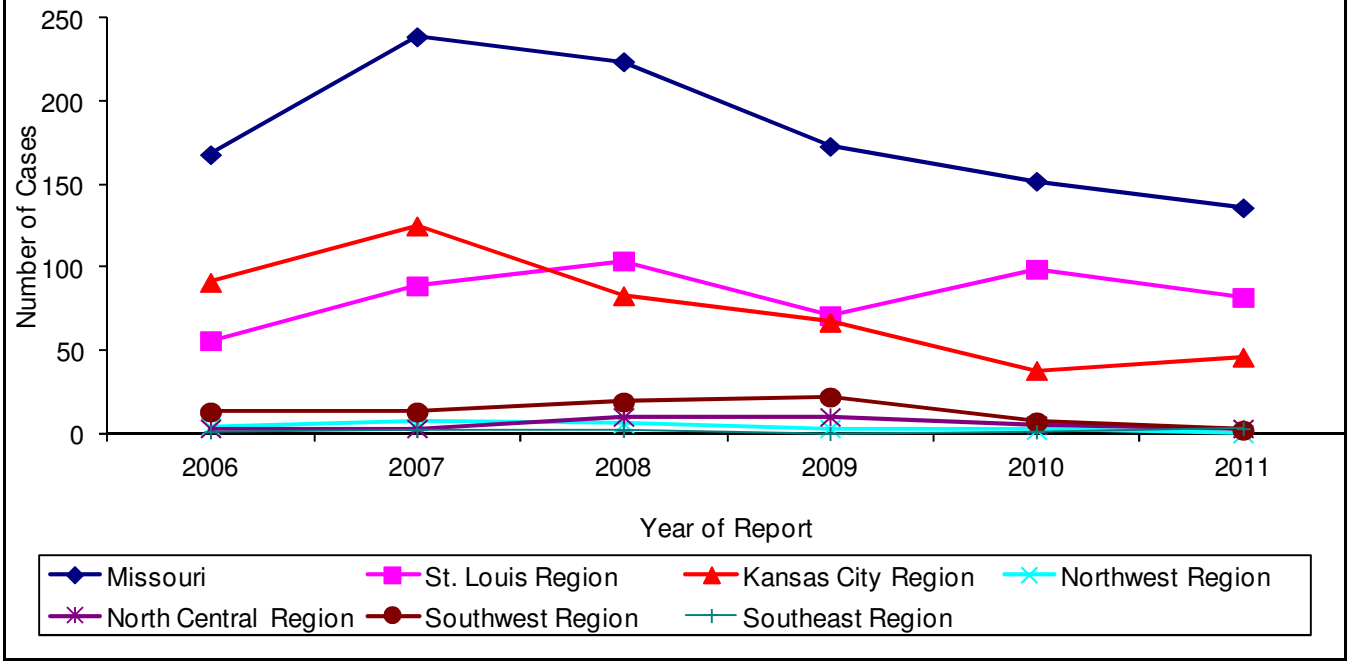


Figure 20. Reported P&S syphilis cases by geographic region and year of report, Missouri, 2006-2011



The largest numbers of P&S syphilis cases were reported among black/African American males (69) and white males (55) (Figure 19). The number of reported cases decreased from 2010 to 2011 among males, increased among black/African American females, and remained the same among white females. There were differences in the distribution of reported cases by age at diagnosis among the race/ethnicity and sex categories. Among white males, the largest number of cases was reported among individuals 40 or more years of age at the time of diagnosis. Among black/African American males, cases were greatest among those 20-24 years of age.

The number of reported P&S syphilis cases in Missouri increased from 2006 to 2007 and then decreased through 2011 (Figure 20). The number of reported P&S syphilis cases increased from 2010 to 2011 in the Kansas City HIV region (38 to 46) and the Southeast HIV region (1 to 3). The number of reported P&S syphilis cases decreased from 2010 to 2011 in the remaining HIV regions.

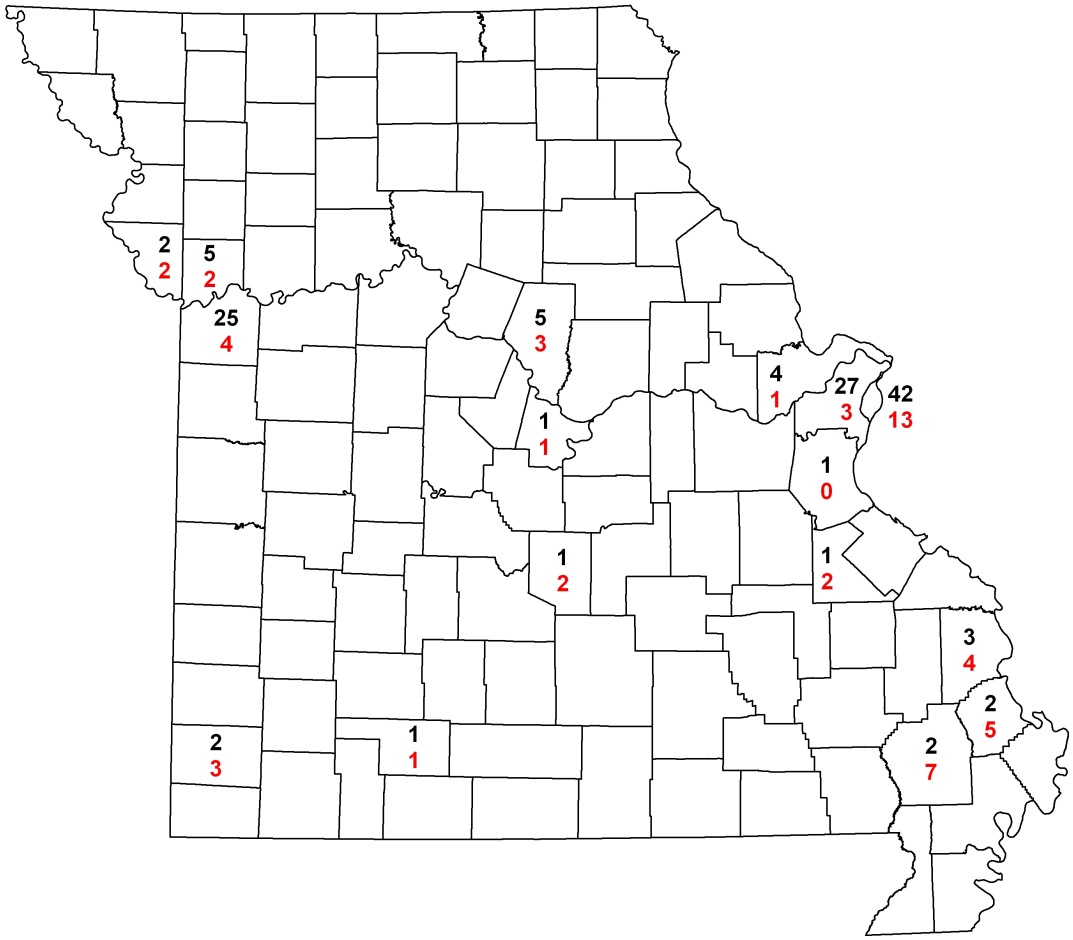
Table 25. Reported early latent syphilis cases and rates, by race*, by geographic region, by sex, Missouri, 2011

	Male			Female			Total	
	Cases	%	Rate**	Cases	%	Rate**	Cases	Rate**
Missouri								
White	52	47.3%	2.2	5	35.7%	0.2	57	1.2
Black/African American	56	50.9%	17.2	8	57.1%	2.2	64	9.3
Other/Unknown*	2	1.8%	--	1	7.1%	--	3	--
Total Cases	**110**	100.0%	3.7	**14**	100.0%	0.5	**124**	2.1
St. Louis Region								
White	29	45.3%	3.9	3	30.0%	0.4	32	2.1
Black/African American	34	53.1%	18.3	7	70.0%	3.2	41	10.1
Other/Unknown*	1	1.6%	--	0	0.0%	--	1	--
Total Cases	**64**	100.0%	6.4	**10**	100.0%	0.9	**74**	3.6
Kansas City Region								
White	14	45.2%	3.1	0	0.0%	0.0	14	1.5
Black/African American	16	51.6%	18.7	1	100.0%	1.0	17	9.3
Other/Unknown*	1	3.2%	--	0	0.0%	--	1	--
Total Cases	**31**	100.0%	5.1	**1**	100.0%	0.2	**32**	2.6
Northwest Region								
White	0	--	0.0	0	--	0.0	0	0.0
Black/African American	0	--	0.0	0	--	0.0	0	0.0
Other/Unknown*	0	--	--	0	--	--	0	--
Total Cases	**0**	--	0.0	**0**	--	0.0	**0**	0.0
North Central Region								
White	3	60.0%	0.9	0	0.0%	0.0	3	0.4
Black/African American	2	40.0%	9.5	0	0.0%	0.0	2	5.2
Other/Unknown*	0	0.0%	--	1	100.0%	--	1	--
Total Cases	**5**	100.0%	1.3	**1**	100.0%	0.3	**6**	0.8
Southwest Region								
White	3	75.0%	0.6	0	--	0.0	3	0.3
Black/African American	1	25.0%	8.0	0	--	0.0	1	4.9
Other/Unknown*	0	0.0%	--	0	--	--	0	--
Total Cases	**4**	100.0%	0.7	**0**	--	0.0	**4**	0.3
Southeast Region								
White	3	50.0%	1.4	2	100.0%	0.9	5	1.1
Black/African American	3	50.0%	18.5	0	0.0%	0.0	3	9.8
Other/Unknown*	0	0.0%	--	0	0.0%	--	0	--
Total Cases	**6**	**100.0%**	**2.4**	**2**	**100.0%**	0.8	**8**	1.6

*Includes cases identified with Hispanic ethnicity.
**Per 100,000 population based on 2010 MDHSS population estimates.

There were a total of 124 early latent syphilis cases reported in 2011, compared to 133 cases reported in 2010 (Table 25). The majority of cases (89%) were reported among males. Males represented a smaller proportion of the reported cases in the St. Louis HIV region (86%) than in the Kansas City HIV region (97%). The rate of early latent syphilis cases among all cases was highest in the St. Louis HIV region (3.6), followed by the Kansas City HIV region (2.6). Sixty percent of all early latent syphilis cases were reported in the St. Louis HIV region and 26% were reported in the Kansas City HIV region. The Southeast HIV region had the third largest number of early latent syphilis cases reported. The rate of reported early latent syphilis cases was higher for blacks/ African Americans compared to whites in all regions that reported cases among blacks/African Americans.

Figure 21. Reported early latent syphilis cases* and rates, by county, Missouri, 2011**



*Case counts are in black.
**Case rates are in red, per 100,000 population based on 2010 MDHSS population estimates.

Early latent syphilis cases were concentrated in metropolitan areas (Figure 21). There were 99 counties that did not report any early latent syphilis cases in 2011. St. Louis City had the highest number of reported early latent syphilis cases (42).

Figure 22. Reported early latent syphilis cases, by race and sex, by age group at diagnosis, Missouri, 2011

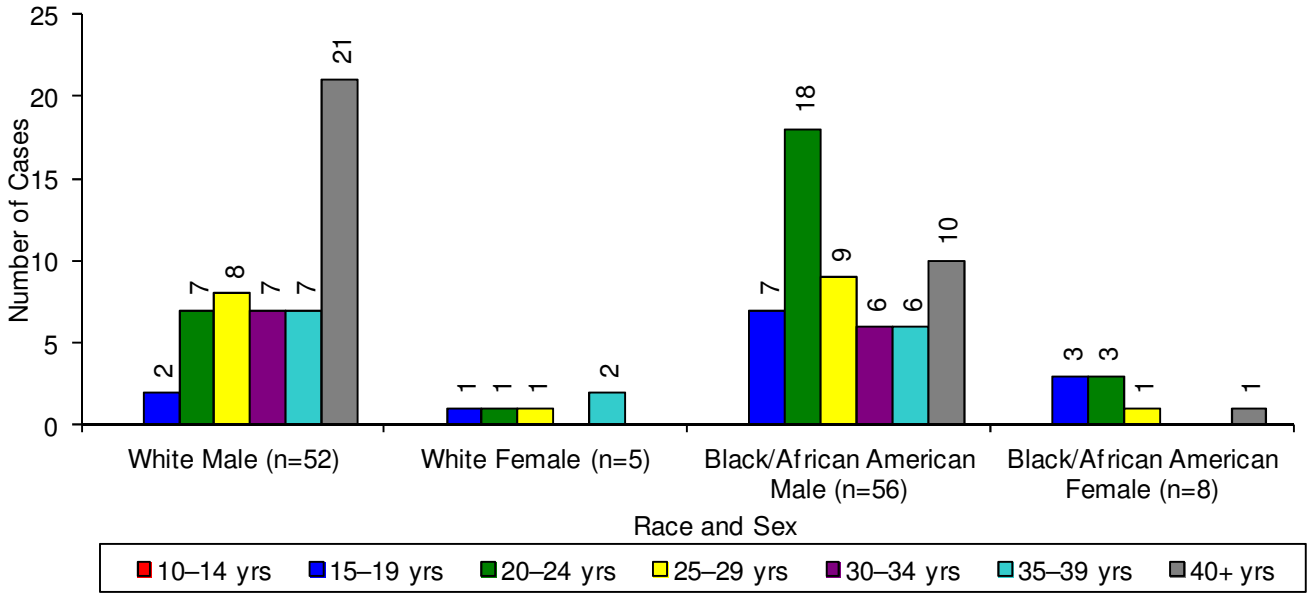
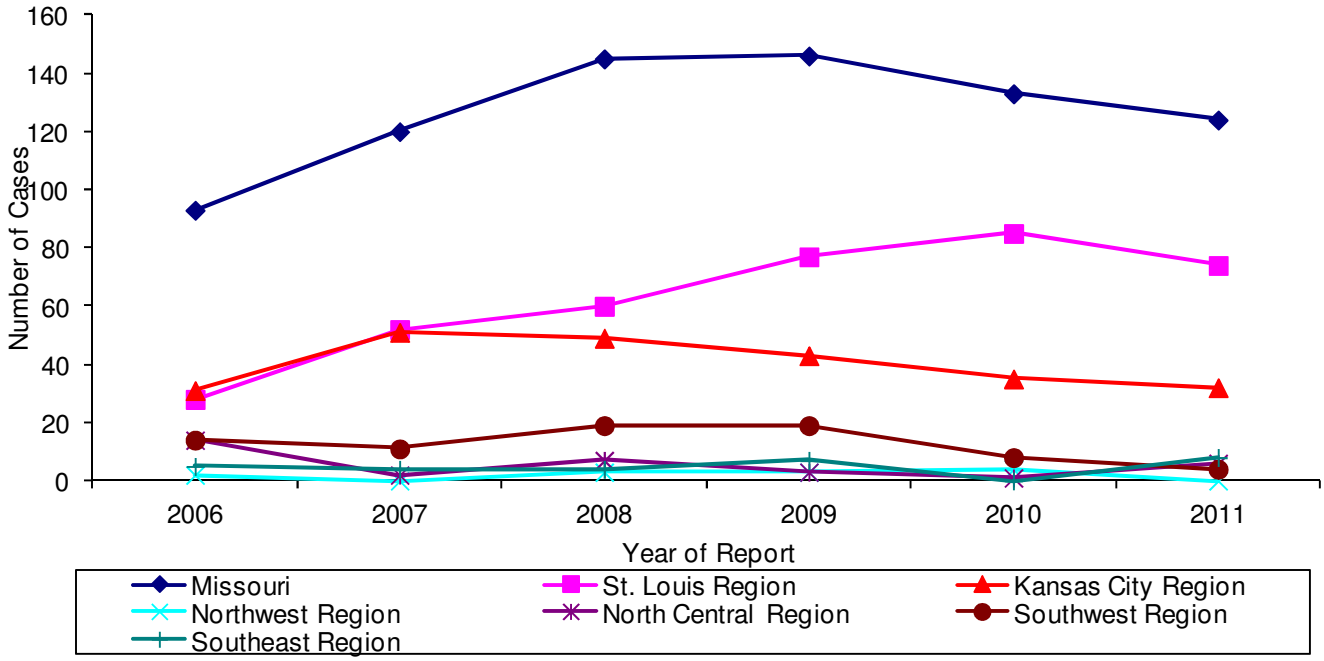


Figure 23. Reported early latent syphilis cases by geographic region and year of report, Missouri, 2006-2011



The largest numbers of early latent syphilis cases were reported among black/African American males (56) and white males (52) (Figure 22). The number of reported cases increased among all race/ethnicity and sex categories presented except black/African American males. From 2010 to 2011 the number of early latent syphilis cases among black/African American males decreased from 66 to 56 cases. Among white males, the largest number of cases was reported among individuals 40 or more years of age at the time of diagnosis. Among black/African American males, cases were greatest among those 20-24 years of age.

The number of reported early latent syphilis cases in Missouri increased from 2006 to 2009 and then decreased through 2011 (Figure 23). The number of reported early latent syphilis cases generally increased from 2006 to 2010 with a decrease observed in 2011 in the St. Louis HIV region. In the Kansas City HIV region, reported early latent syphilis has decreased from 2007 to 2011. The number of reported early latent syphilis cases decreased from 2010 to 2011 in all regions except the North Central and Southeast regions.

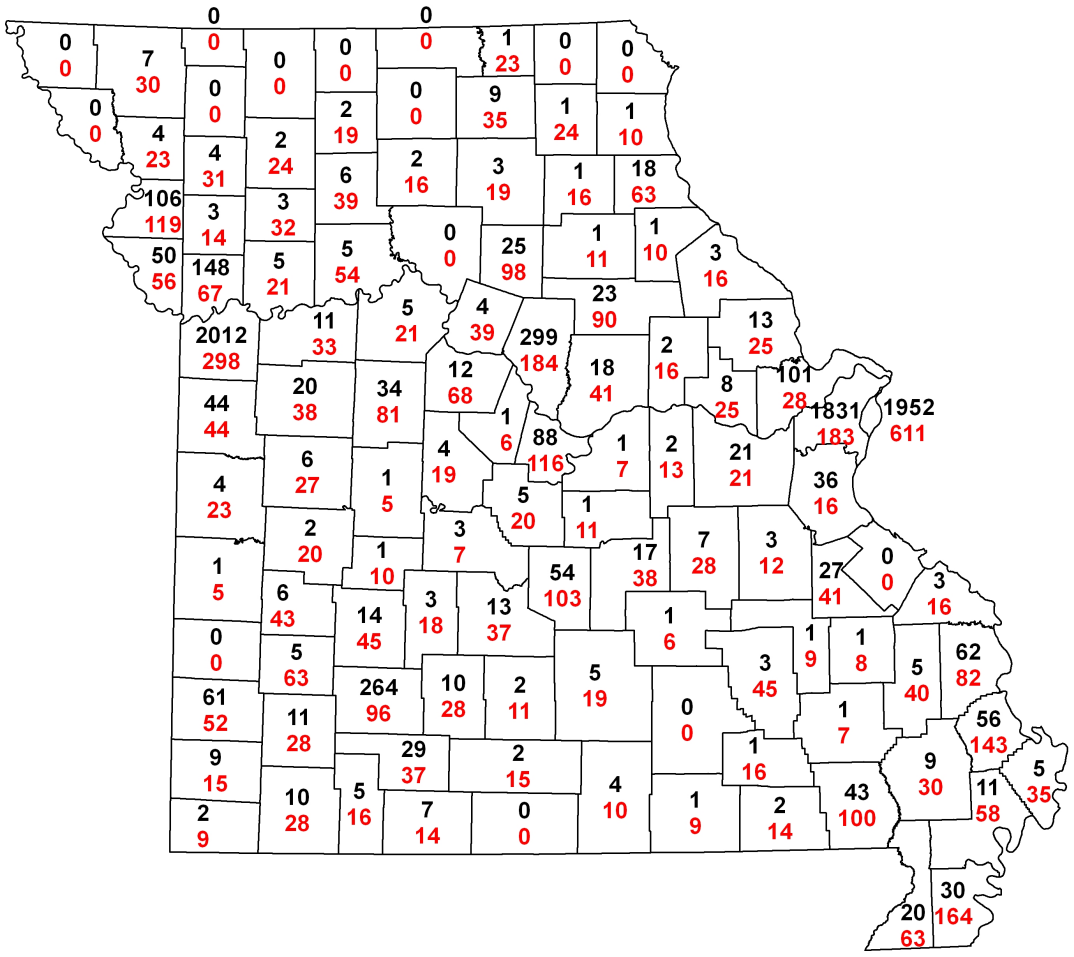
Table 26. Reported gonorrhea cases and rates, by race*, by geographic region, by sex, Missouri, 2011

	Male			Female			Total	
	Cases	%	Rate**	Cases	%	Rate**	Cases	Rate**
Missouri								
White	523	14.5%	22.0	898	21.4%	36.4	1,421	29.3
Black/African American	2,400	66.5%	736.0	2,506	59.7%	694.1	4,906	714.0
Other/Unknown*	684	19.0%	--	791	18.9%	--	1,475	--
Total Cases	**3,607**	100.0%	123.0	**4,195**	100.0%	137.3	**7,802**	130.3
St. Louis Region								
White	120	6.3%	16.1	118	5.7%	15.1	238	15.6
Black/African American	1,308	68.9%	703.7	1,439	69.7%	650.1	2,747	674.6
Other/Unknown*	470	24.8%	--	507	24.6%	--	977	--
Total Cases	**1,898**	100.0%	188.8	**2,064**	100.0%	191.4	**3,962**	190.1
Kansas City Region								
White	156	14.5%	34.2	264	21.6%	55.4	420	45.0
Black/African American	818	76.0%	957.4	835	68.2%	856.9	1,653	903.8
Other/Unknown*	103	9.6%	--	125	10.2%	--	228	--
Total Cases	**1,077**	100.0%	176.5	**1,224**	100.0%	190.5	**2,301**	183.7
Northwest Region								
White	29	46.8%	25.7	51	63.8%	44.3	80	35.1
Black/African American	25	40.3%	494.0	11	13.8%	422.3	36	469.6
Other/Unknown*	8	12.9%	--	18	22.5%	--	26	--
Total Cases	**62**	100.0%	49.8	**80**	100.0%	64.6	**142**	57.2
North Central Region								
White	62	29.7%	18.6	191	53.2%	55.8	253	37.4
Black/African American	121	57.9%	576.4	118	32.9%	677.0	239	622.0
Other/Unknown*	26	12.4%	--	50	13.9%	--	76	--
Total Cases	**209**	100.0%	55.7	**359**	100.0%	94.0	**568**	75.0
Southwest Region								
White	135	53.8%	26.5	192	66.7%	36.6	327	31.6
Black/African American	61	24.3%	488.6	27	9.4%	337.9	88	429.8
Other/Unknown*	55	21.9%	--	69	24.0%	--	124	--
Total Cases	**251**	100.0%	44.2	**288**	100.0%	49.9	**539**	47.1
Southeast Region								
White	21	19.1%	9.5	82	45.6%	36.0	103	22.9
Black/African American	67	60.9%	412.3	76	42.2%	533.6	143	469.0
Other/Unknown*	22	20.0%	--	22	12.2%	--	44	--
Total Cases	**110**	100.0%	44.4	**180**	100.0%	71.6	**290**	58.1

*Includes cases identified with Hispanic ethnicity.
**Per 100,000 population based on 2010 MDHSS population estimates.

There were a total of 7,802 gonorrhea cases reported in 2011 (Table 26). This represented a 9% increase in the number of reported cases compared to 2010. The majority of cases (54%) were reported among females. The proportion of gonorrhea cases reported among females varied by HIV region. The St. Louis HIV region reported the lowest proportion of female cases (52%), followed by the Kansas City (53%), Southwest (53%), Northwest (56%), Southeast (62%) and North Central (63%) HIV regions. The rate of gonorrhea cases among females was highest in the St. Louis HIV region (191.4), followed by the Kansas City HIV region (190.5). Fifty-one percent of all gonorrhea cases were reported in the St. Louis HIV region and 29% were reported in the Kansas City HIV region. The North Central HIV region had the third largest number of gonorrhea cases reported. The rate of reported gonorrhea cases was higher for blacks/African Americans compared to whites in all regions.

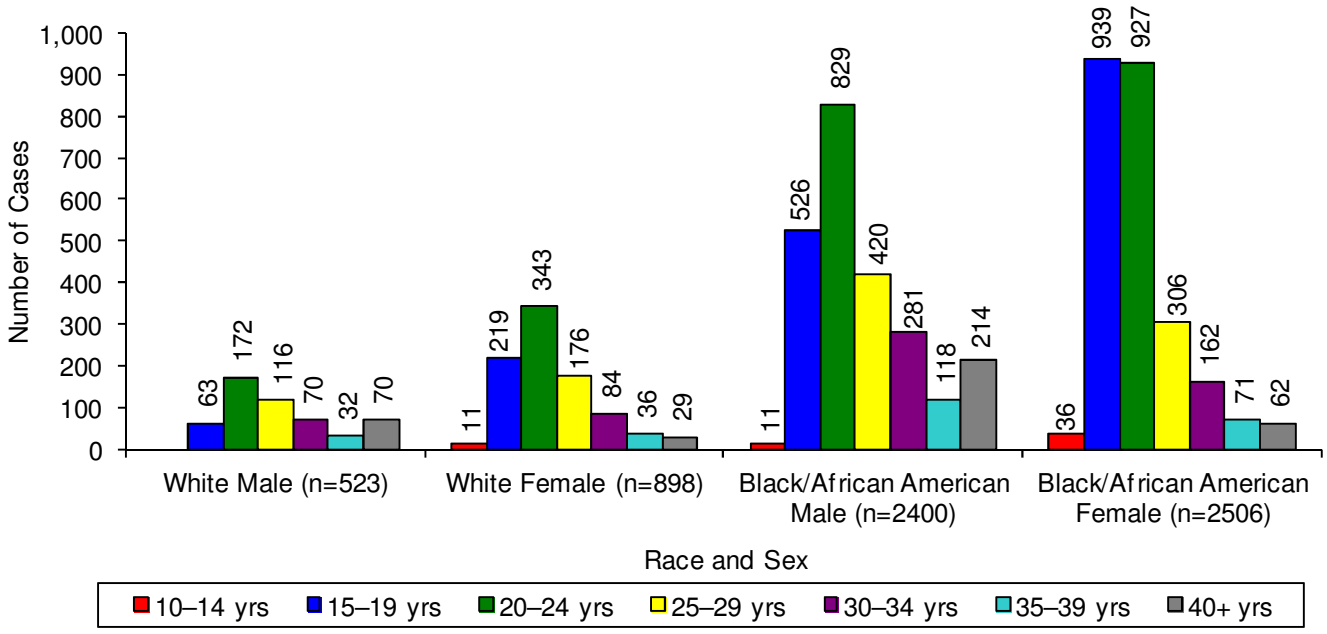
Figure 24. Reported gonorrhea cases* and rates, by county, Missouri, 2011**



*Case counts are in black.
**Case rates are in red, per 100,000 population based on 2010 MDHSS population estimates.

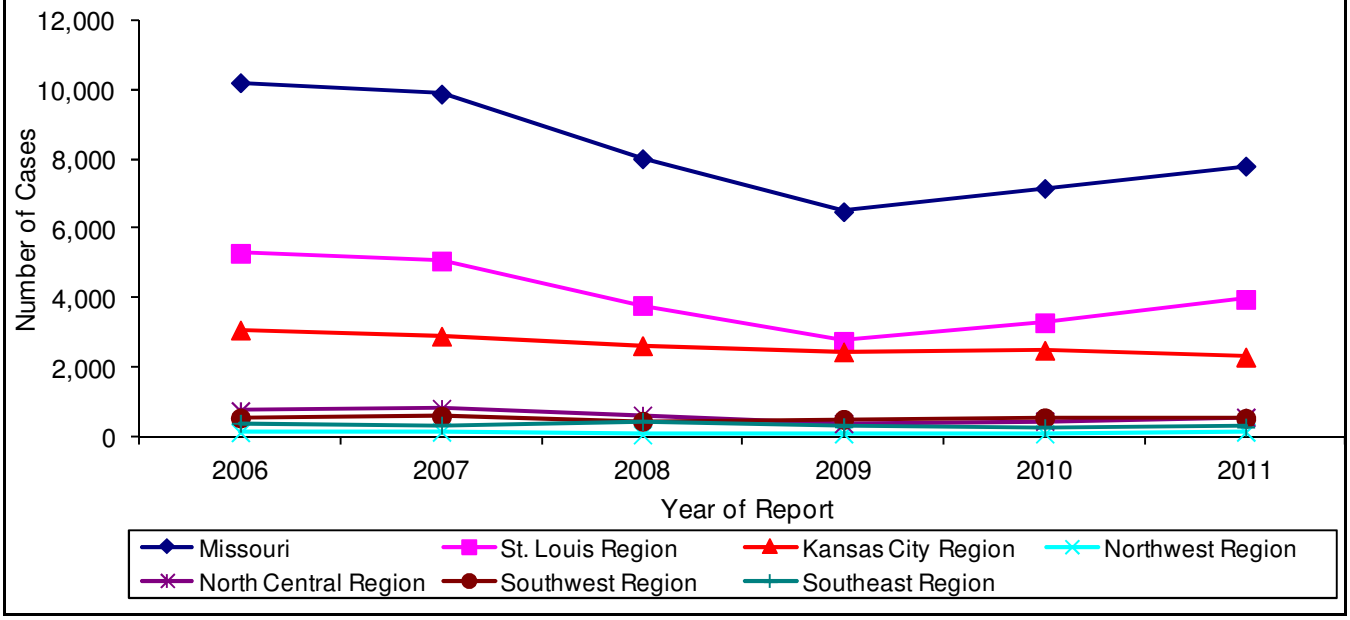
Gonorrhea cases reported in St. Louis City, St. Louis County, and Jackson County represented 74% of all reported cases in 2011 (Figure 24). There were 15 counties that did not report any gonorrhea cases in 2011. St. Louis City had the highest rate of reported gonorrhea cases at 611 per 100,000 persons. This means that for every 100,000 persons living in St. Louis City, there were 611 reported with gonorrhea in 2011.

Figure 25. Reported gonorrhea cases, by race and sex, by age group at diagnosis, Missouri, 2011



Note: Totals include persons diagnosed at <10 years of age or whose age at diagnosis is unknown.

Figure 26. Reported gonorrhea cases by geographic region and year of report, Missouri, 2006-2011



The largest numbers of gonorrhea cases were reported among black/African American females (2,506) and black/African American males (2,400) (Figure 25). The number of reported cases increased from 2010 to 2011 among all race/ethnicity and sex categories presented. Among white and black/African American males and white females, the largest number of cases was reported among individuals 20-24 years of age at the time of diagnosis. Among black/African American females, the largest number of cases was reported among 15-19 year olds, and was followed by 20-24 year olds. A greater proportion of gonorrhea cases among white (13%) and black/African American (9%) males was diagnosed among individuals 40 or more years of age compared to females cases presented.

The number of reported gonorrhea cases in Missouri decreased from 2006 to 2009 and then increased through 2011 (Figure 26). Similar trends were observed in the St. Louis and North Central HIV regions. The numbers of reported gonorrhea cases were lower in 2011 than 2010 in the Kansas City and Southwest HIV regions. In all other regions, the number of reported gonorrhea cases increased from 2010 to 2011. The number of reported gonorrhea cases was lower in 2011 compared to 2006 in all HIV regions, except for the Northwest region.

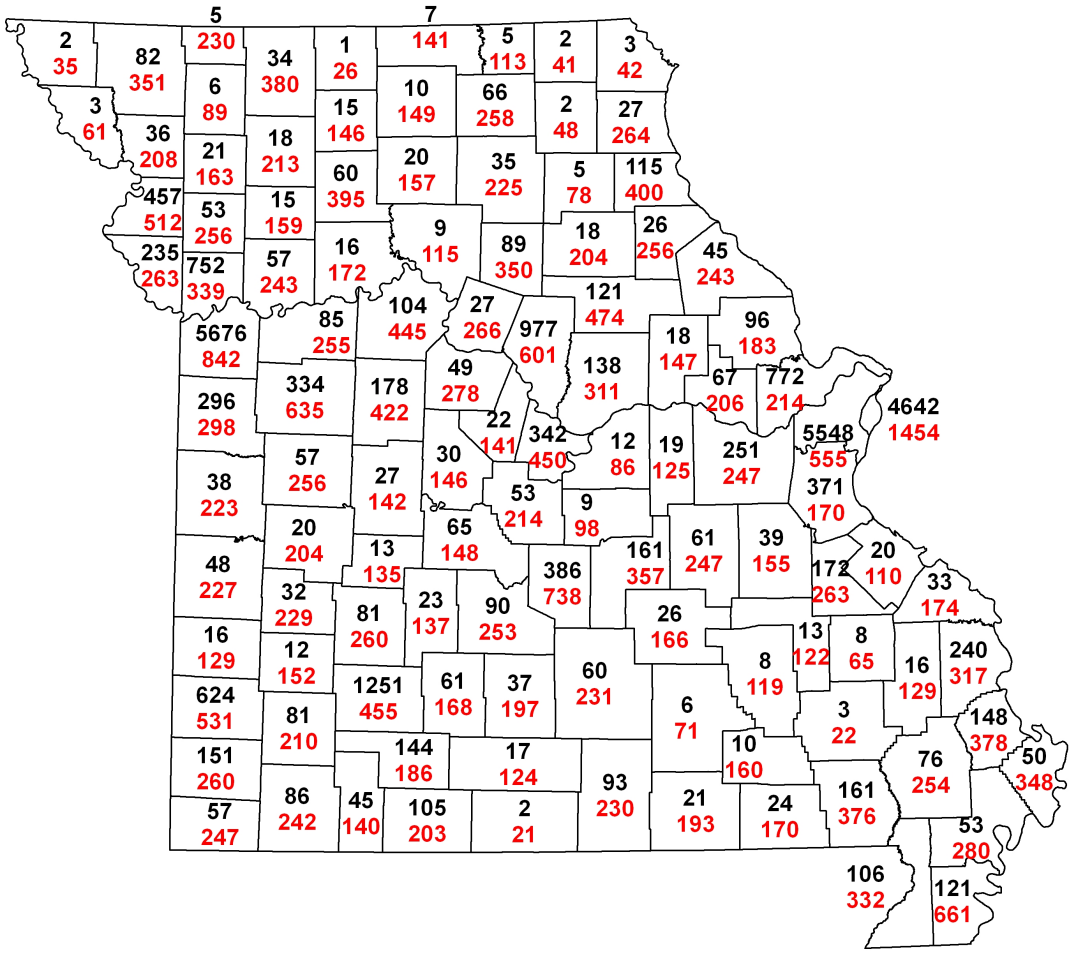
Table 27. Reported chlamydia cases and rates, by race*, by geographic region, by sex, Missouri, 2011

	Male			Female			Total	
	Cases	%	Rate**	Cases	%	Rate**	Cases	Rate**
Missouri								
White	1,864	23.9%	78.3	6,120	30.5%	247.8	7,984	164.6
Black/African American	3,800	48.8%	1165.3	7,616	37.9%	2109.4	11,416	1661.4
Other/Unknown*	2,126	27.3%	--	6,361	31.7%	--	8,487	--
Total Cases	**7,790**	100.0%	265.6	**20,097**	100.0%	657.7	**27,887**	465.6
St. Louis Region								
White	403	11.7%	54.0	906	10.9%	115.7	1,309	85.6
Black/African American	2,009	58.1%	1080.9	4,309	52.0%	1946.8	6,318	1551.6
Other/Unknown*	1,045	30.2%	--	3,075	37.1%	--	4,120	--
Total Cases	**3,457**	100.0%	343.8	**8,290**	100.0%	768.7	**11,747**	563.7
Kansas City Region								
White	472	20.9%	103.4	1,491	28.1%	313.0	1,963	210.4
Black/African American	1,312	58.2%	1535.6	2,490	47.0%	2555.2	3,802	2078.9
Other/Unknown*	471	20.9%	--	1,321	24.9%	--	1,792	--
Total Cases	**2,255**	100.0%	369.5	**5,302**	100.0%	825.3	**7,557**	603.2
Northwest Region								
White	86	50.3%	76.3	416	63.7%	361.3	502	220.3
Black/African American	37	21.6%	731.1	54	8.3%	2072.9	91	1187.1
Other/Unknown*	48	28.1%	--	183	28.0%	--	231	--
Total Cases	**171**	100.0%	137.3	**653**	100.0%	527.3	**824**	331.8
North Central Region								
White	259	39.5%	77.7	1,070	53.7%	312.8	1,329	196.7
Black/African American	200	30.5%	952.7	398	20.0%	2283.3	598	1556.3
Other/Unknown*	196	29.9%	--	525	26.3%	--	721	--
Total Cases	**655**	100.0%	174.4	**1,993**	100.0%	521.7	**2,648**	349.5
Southwest Region								
White	525	55.7%	102.9	1,754	62.5%	334.0	2,279	220.2
Black/African American	141	15.0%	1129.4	138	4.9%	1726.9	279	1362.6
Other/Unknown*	277	29.4%	--	914	32.6%	--	1,191	--
Total Cases	**943**	100.0%	166.1	**2,806**	100.0%	486.2	**3,749**	327.5
Southeast Region								
White	119	38.5%	53.7	483	45.9%	211.9	602	133.9
Black/African American	101	32.7%	621.6	227	21.6%	1593.8	328	1075.7
Other/Unknown*	89	28.8%	--	343	32.6%	--	432	--
Total Cases	**309**	100.0%	124.7	**1,053**	100.0%	418.6	**1,362**	272.8

*Includes cases identified with Hispanic ethnicity.
**Per 100,000 population based on 2010 MDHSS population estimates.

There were a total of 27,887 chlamydia cases reported in 2011 (Table 27). The majority of cases (72%) were reported among females. The proportion of chlamydia cases reported among females varied by HIV region. The Northwest HIV region reported the highest proportion of female cases (79%), followed by the Southeast (77%), Southwest and North Central (both 75%), St. Louis (71%) and Kansas City (70%) HIV regions. The rate of chlamydia cases among females was highest in the Kansas City HIV region (825.3), followed by the St. Louis HIV region (768.7). Forty-two percent of all chlamydia cases were reported in the St. Louis HIV region and 27% were reported in the Kansas City HIV region. The Southwest HIV region had the third largest number of chlamydia cases reported. The rate of reported chlamydia cases was higher for blacks/African Americans compared to whites in all regions.

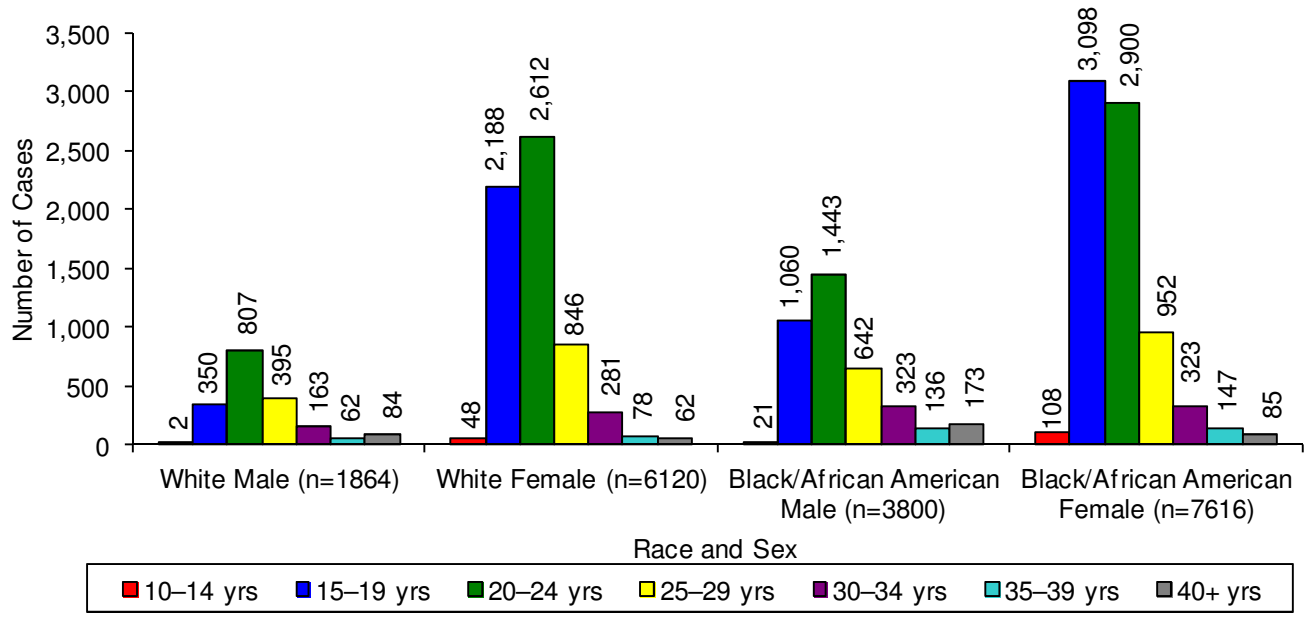
Figure 27. Reported chlamydia cases* and rates, by county, Missouri, 2011**



*Case counts are in black.
**Case rates are in red, per 100,000 population based on 2010 MDHSS population estimates.

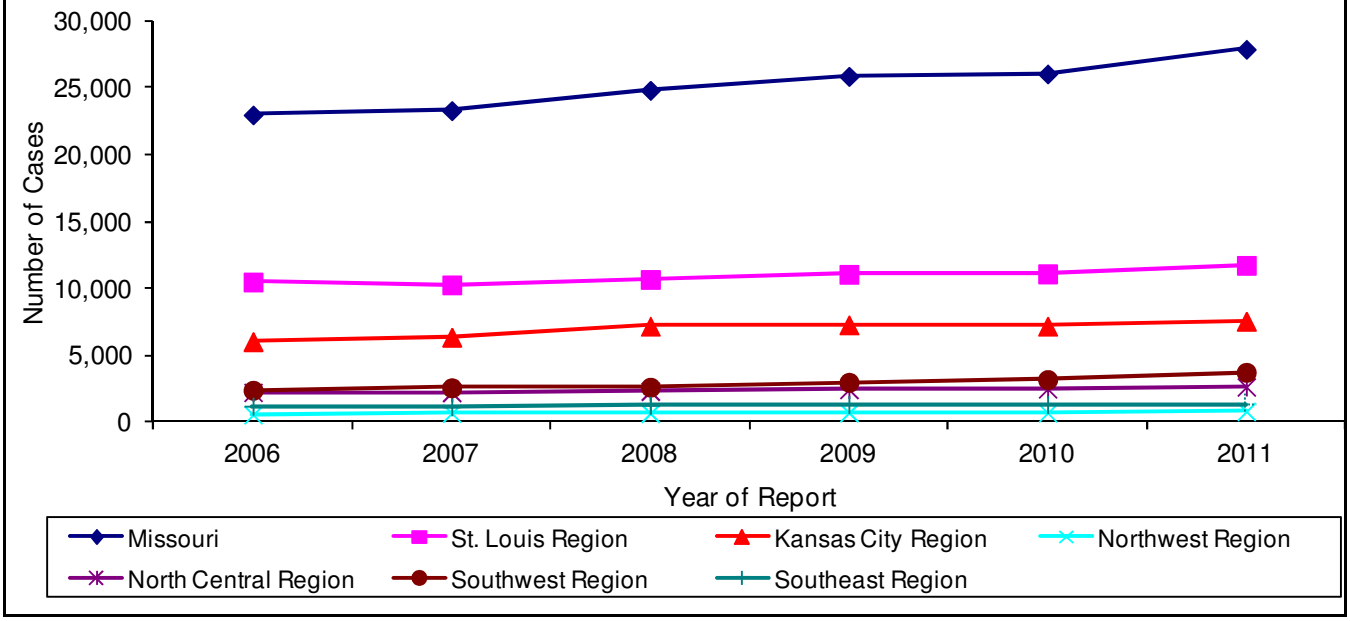
Chlamydia cases reported in St. Louis City, St. Louis County, and Jackson County represented 57% of all reported cases in 2011 (Figure 27), although these areas represent only 33% of Missouri's general population. All counties reported at least one chlamydia case in 2011. St. Louis City had the highest rate of reported chlamydia cases at 1,454 per 100,000 persons. This means that for every 100,000 persons living in St. Louis City, there were 1,454 reported with chlamydia in 2011.

Figure 28. Reported chlamydia cases, by race and sex, by age group at diagnosis, Missouri, 2011



Note: Totals include persons diagnosed at <10 years of age or whose age at diagnosis is unknown.

Figure 29. Reported chlamydia cases by geographic region and year of report, Missouri, 2006-2011



The largest numbers of chlamydia cases were reported among black/African American females (7,616) and white females (6,120) (Figure 28). The number of reported cases increased from 2010 to 2011 among all white males and females and decreased among black/African American males and females. The number of cases increased from 1,567 to 1,864 among white males and from 5,587 to 6,120 among white females. Among black/African American males, the number of reported chlamydia cases decreased from 3,948 to 3,800 and among black/African American females from 7,769 to 7,616. Among males and white females, the largest number of cases was reported among individuals 20-24 years of age at the time of diagnosis. Among black/African American females, the largest number of cases was reported among 15-19 year olds.

The number of reported chlamydia cases in Missouri increased from 2006 to 2011 (Figure 29). Similar trends were observed for the St. Louis, Southwest and North Central HIV regions. The number of reported cases increased from 2010 to 2011 in all HIV regions.

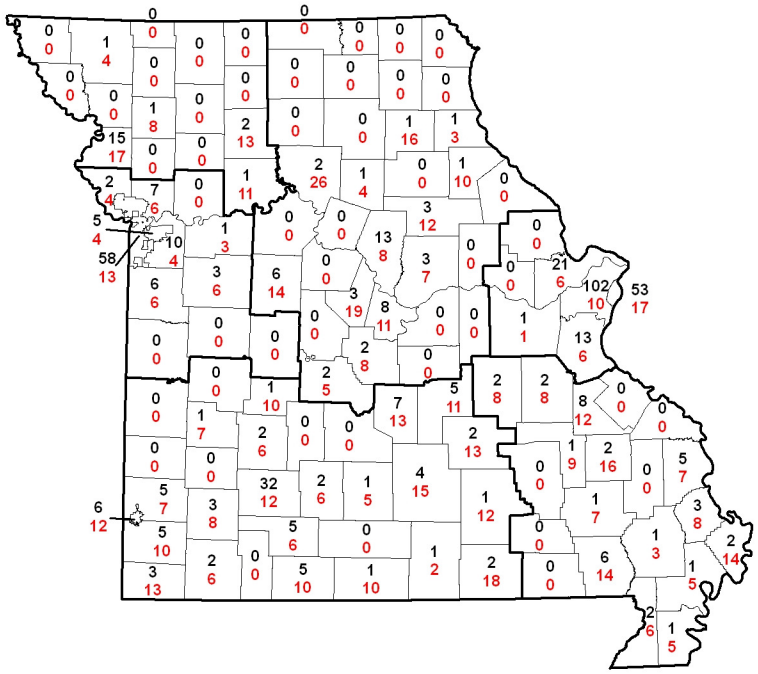
Table 28. Reported hepatitis B† cases and rates, by race*, by geographic region, by sex, Missouri, 2011

	Male			Female			Total	
	Cases	%	Rate**	Cases	%	Rate**	Cases	Rate**
Missouri								
White	90	41.7%	3.8	61	23.0%	2.5	151	3.1
Black	22	10.2%	6.7	40	15.1%	11.1	62	9.0
Other/Unknown*	104	48.1%	--	164	61.9%	--	268	--
Total Cases	**216**	100.0%	7.4	**265**	100.0%	8.7	**481**	8.0
St. Louis Region								
White	23	27.7%	3.1	17	15.9%	2.2	40	2.6
Black	11	13.3%	5.9	22	20.6%	9.9	33	8.1
Other/Unknown*	49	59.0%	--	68	63.6%	--	117	--
Total Cases	**83**	100.0%	8.3	**107**	100.0%	9.9	**190**	9.1
Kansas City Region								
White	11	44.0%	2.4	9	13.4%	1.9	20	2.1
Black	3	12.0%	3.5	8	11.9%	8.2	11	6.0
Other/Unknown*	11	44.0%	--	50	74.6%	--	61	--
Total Cases	**25**	100.0%	4.1	**67**	100.0%	10.4	**92**	7.3
Northwest Region								
White	9	90.0%	8.0	3	30.0%	2.6	12	5.3
Black	0	0.0%	0.0	1	10.0%	38.4	1	13.0
Other/Unknown*	1	10.0%	--	6	60.0%	--	7	--
Total Cases	**10**	100.0%	8.0	**10**	100.0%	8.1	**20**	8.1
North Central Region								
White	10	52.6%	3.0	9	33.3%	2.6	19	2.8
Black	2	10.5%	9.5	6	22.2%	34.4	8	20.8
Other/Unknown*	7	36.8%	--	12	44.4%	--	19	--
Total Cases	**19**	100.0%	5.1	**27**	100.0%	7.1	**46**	6.1
Southwest Region								
White	24	42.9%	4.7	16	40.0%	3.0	40	3.9
Black	3	5.4%	24.0	3	7.5%	37.5	6	29.3
Other/Unknown*	29	51.8%	--	21	52.5%	--	50	--
Total Cases	**56**	100.0%	9.9	**40**	100.0%	6.9	**96**	8.4
Southeast Region								
White	13	56.5%	5.9	7	50.0%	3.1	20	4.4
Black	3	13.0%	18.5	0	0.0%	0.0	3	9.8
Other/Unknown*	7	30.4%	--	7	50.0%	--	14	--
Total Cases	**23**	100.0%	9.3	**14**	100.0%	5.6	**37**	7.4

†Includes confirmed and probable case classifications of hepatitis B Acute, hepatitis B Chronic, hepatitis B Prenatal, and hepatitis B Perinatal.
*Includes cases identified with Hispanic ethnicity.
**Per 100,000 population based on 2010 MDHSS population estimates.

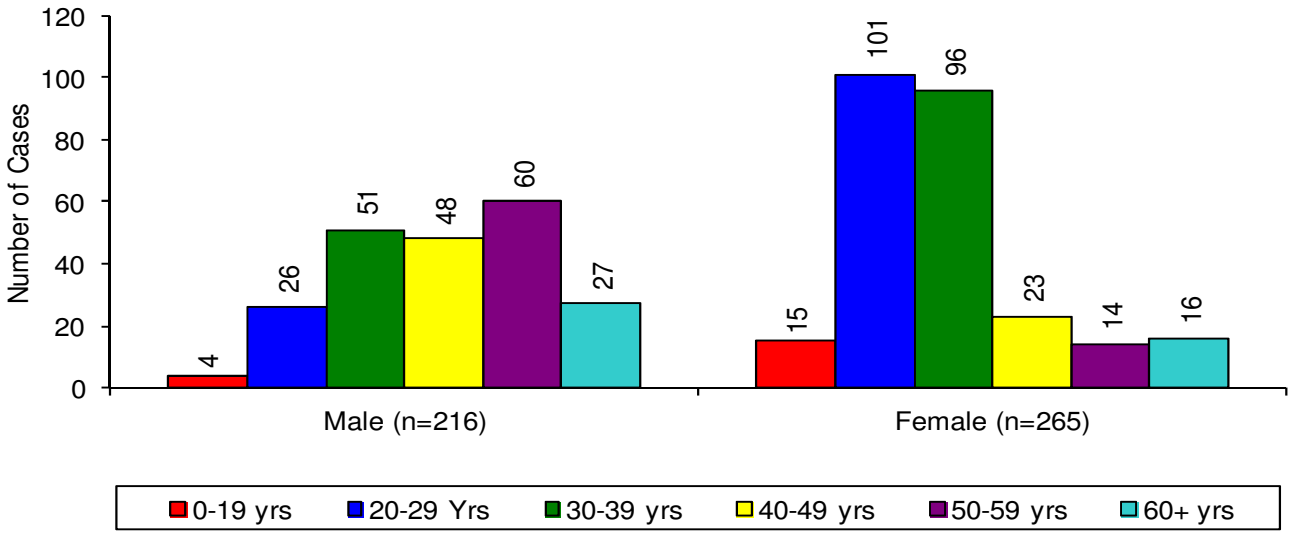
Of the 481 hepatitis B cases reported in 2011, 60 were reported with acute hepatitis B, 278 with chronic hepatitis B, 141 with prenatal hepatitis B, and 2 with perinatal hepatitis B. The number of reported hepatitis B cases in Missouri increased by 30 cases from 2010 (451) to 2011 (481) (Table 28). The number of persons reported with hepatitis B increased from 2010 to 2011 in all HIV regions except the Northwest HIV region. Overall, the rate of reported hepatitis B cases was highest in the St. Louis HIV region (9.1 per 100,000). Overall, 55% of reported cases were females, although variation in the ratio of male to female cases existed among the HIV regions. The large proportion of cases with unknown race/ethnicity information makes it difficult to interpret differences in reported infections by race/ethnicity.

Figure 30. Reported hepatitis B cases* and rates, by jurisdiction, Missouri, 2011**



*Case counts are in black.
**Case rates are in red, per 100,000 population based on 2010 MDHSS population estimates.

Figure 31. Reported hepatitis B cases, by sex and by age group at diagnosis, Missouri, 2011



Note: Totals include persons whose age at diagnosis is unknown.

St. Louis County had the greatest number of reported hepatitis B cases (102), followed by Kansas City (58) (Figure 30). There were 51 jurisdictions that did not report any hepatitis B cases in 2011.

There were differences in the age distribution of reported hepatitis B cases by sex (Figure 31). Among males, the largest numbers of reported cases were between 50-59 years of age. The largest numbers of cases were 20-29 years of age at diagnosis among females.

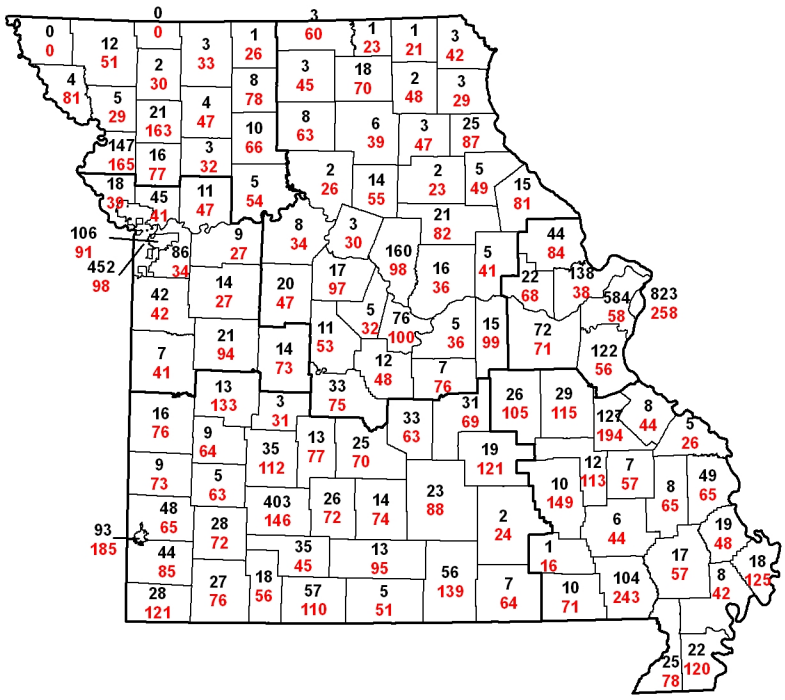
Table 29. Reported hepatitis C† cases and rates, by race*, by geographic region, by sex, Missouri, 2011

	Male			Female			Total‡	
	Cases	%	Rate**	Cases	%	Rate**	Cases	Rate**
Missouri								
White	970	30.1%	40.7	765	41.9%	31.0	1,735	35.8
Black	295	9.2%	90.5	157	8.6%	43.5	453	65.9
Other/Unknown*	1,956	60.7%	--	904	49.5%	--	2,860	--
Total Cases	**3,221**	100.0%	109.8	**1,826**	100.0%	59.8	**5,048**	84.3
St. Louis Region								
White	166	13.9%	22.2	171	27.9%	21.8	337	22.0
Black	190	15.9%	102.2	99	16.2%	44.7	289	71.0
Other/Unknown*	837	70.2%	--	342	55.9%	--	1179	--
Total Cases	**1,193**	100.0%	118.6	**612**	100.0%	56.7	**1,805**	86.6
Kansas City Region								
White	168	30.9%	36.8	93	33.1%	19.5	261	28.0
Black	48	8.8%	56.2	37	13.2%	38.0	85	46.5
Other/Unknown*	328	60.3%	--	151	53.7%	--	479	--
Total Cases	**544**	100.0%	89.1	**281**	100.0%	43.7	**825**	65.9
Northwest Region								
White	88	56.1%	78.1	49	58.3%	42.6	137	60.1
Black	5	3.2%	98.8	3	3.6%	115.2	8	104.4
Other/Unknown*	64	40.8%	--	32	38.1%	--	96	--
Total Cases	**157**	100.0%	126.1	**84**	100.0%	67.8	**241**	97.0
North Central Region								
White	115	32.3%	34.5	87	50.6%	25.4	202	29.9
Black	30	8.4%	142.9	9	5.2%	51.6	39	101.5
Other/Unknown*	211	59.3%	--	76	44.2%	--	287	--
Total Cases	**356**	100.0%	94.8	**172**	100.0%	45.0	**528**	69.7
Southwest Region								
White	307	47.3%	60.2	269	55.1%	51.2	576	55.6
Black	15	2.3%	120.1	5	1.0%	62.6	21	102.6
Other/Unknown*	327	50.4%	--	214	43.9%	--	541	--
Total Cases	**649**	100.0%	114.3	**488**	100.0%	84.6	**1,138**	99.4
Southeast Region								
White	126	39.1%	56.8	96	50.8%	42.1	222	49.4
Black	7	2.2%	43.1	4	2.1%	28.1	11	36.1
Other/Unknown*	189	58.7%	--	89	47.1%	--	278	--
Total Cases	**322**	100.0%	129.9	**189**	100.0%	75.1	**511**	102.3

†Includes confirmed and probable case classifications of hepatitis C Acute and hepatitis C Chronic.
*Includes cases identified with Hispanic ethnicity.
‡Includes persons with unknown or other sex.
**Per 100,000 population based on 2010 MDHSS population estimates.
Note: Three additional chronic hepatitis C cases were reported to CDC, but were later determined not to meet residency requirements. Therefore the hepatitis C total published in this document will not match the total reported by CDC.

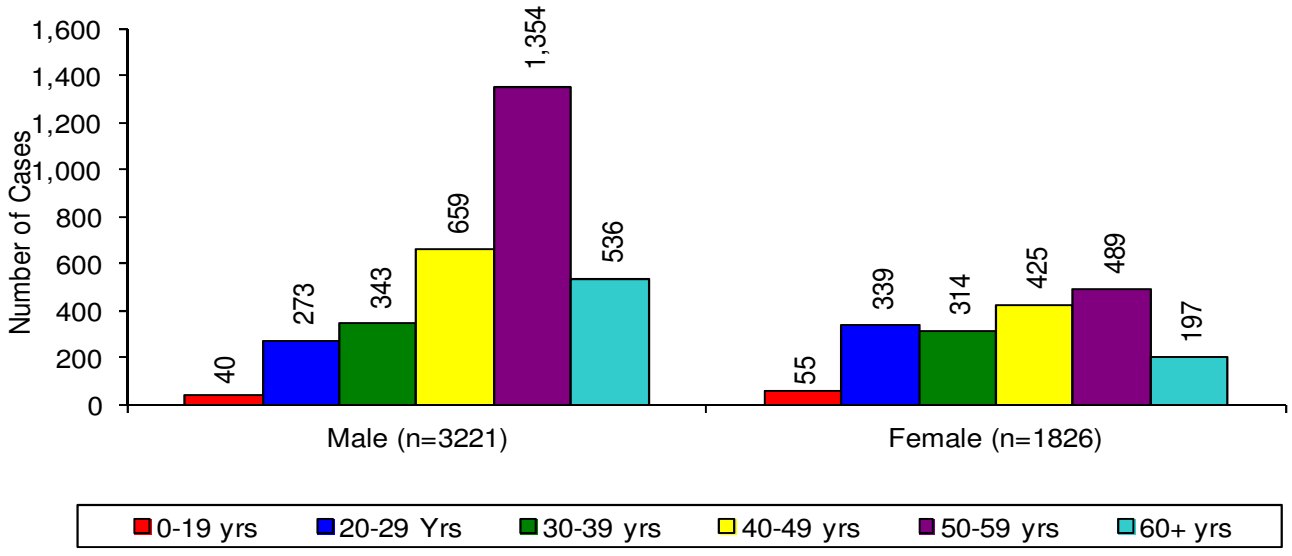
Of the 5,048 hepatitis C cases reported in 2011, 8 were reported with acute hepatitis C and 5,040 with chronic hepatitis C. The number of reported hepatitis C cases in Missouri increased by 633 cases from 2010 (4,415) to 2011 (5,048) (Table 29). The increase was likely due to a change in surveillance practices, and not due to a true increase in disease. The number of persons reported with hepatitis C increased from 2010 to 2011 in all HIV regions except the Kansas City HIV region. Overall, the rate of reported hepatitis C cases was highest in the Southeast HIV region (102.3 per 100,000). In Missouri overall, 64% of the reported cases were males. The large proportion of cases with unknown race/ethnicity information makes it difficult to analyze.

Figure 32. Reported hepatitis C cases* and rates, by jurisdiction, Missouri, 2011**



*Case counts are in black.
**Case rates are in red, per 100,000 population based on 2010 MDHSS population estimates.

Figure 33. Reported hepatitis C cases, by sex and by age group at diagnosis, Missouri, 2011



Note: Totals include persons whose age at diagnosis is unknown.

St. Louis City had the greatest number of reported hepatitis C cases with 823 cases (Figure 32). The second largest number of hepatitis C cases occurred in St. Louis County (584). There were two jurisdictions which did not report a hepatitis C case in 2011.

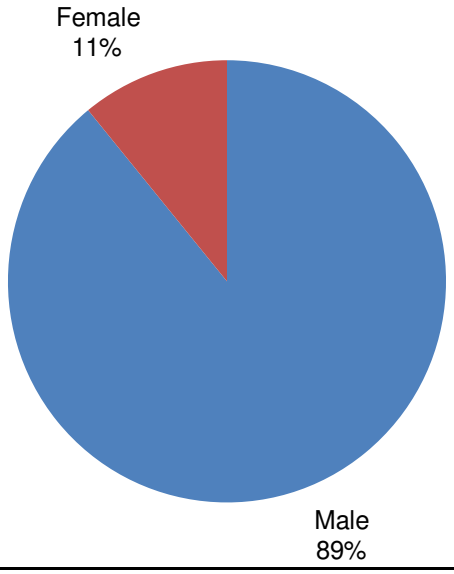
Among both males and females, the largest numbers of reported hepatitis C cases were between 50-59 years (Figure 33).

Table 30. HIV and STD co-infections, Missouri, 2011

Co-infection	Diagnosed with HIV Prior to 2011		Diagnosed with HIV in 2011		Total	
	N	%	N	%	N	%
Chlamydia	69	25.5%	22	28.9%	91	26.2%
Gonorrhea	97	35.8%	26	34.2%	123	35.4%
Syphilis*	74	27.3%	18	23.7%	92	26.5%
Chlamydia and Gonorrhea	23	8.5%	6	7.9%	29	8.4%
Chlamydia and Syphilis*	3	1.1%	1	1.3%	4	1.2%
Gonorrhea and Syphilis*	3	1.1%	1	1.3%	4	1.2%
Chlamydia, Gonorrhea, and Syphilis*	2	0.7%	2	2.6%	4	1.2%
Total	**271**	**100.0%**	**76**	**100.0%**	**347**	**100.0%**

*Only includes diagnoses of primary, secondary, and early latent syphilis.

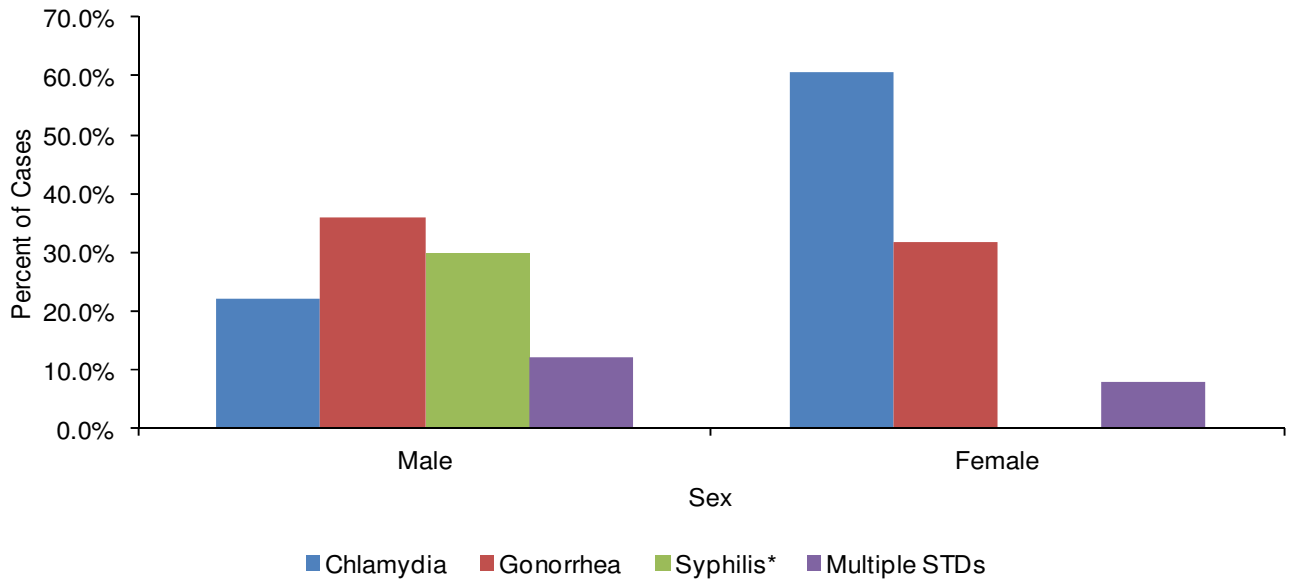
Figure 34. HIV and STD co-infections by sex, Missouri, 2011



Of the 11,138 individuals living with HIV disease, 347 were reported with an STD co-morbidity in 2011 (Table 30). The majority of those reported with an STD co-morbidity were diagnosed with HIV prior to 2011 (78%). There were not significant differences in the type of STD co-morbidity diagnosed based on when the individual was diagnosed with HIV. The largest numbers of HIV co-morbidities were with early syphilis and gonorrhea. The proportion of reported STD infections in 2011 that were living with HIV varied by infection type. Of the 260 early syphilis cases reported in 2011, 40% were among individuals living with HIV. Only 2% of gonorrhea cases and less than 1% of chlamydia cases reported in 2011 were among individuals living with HIV.

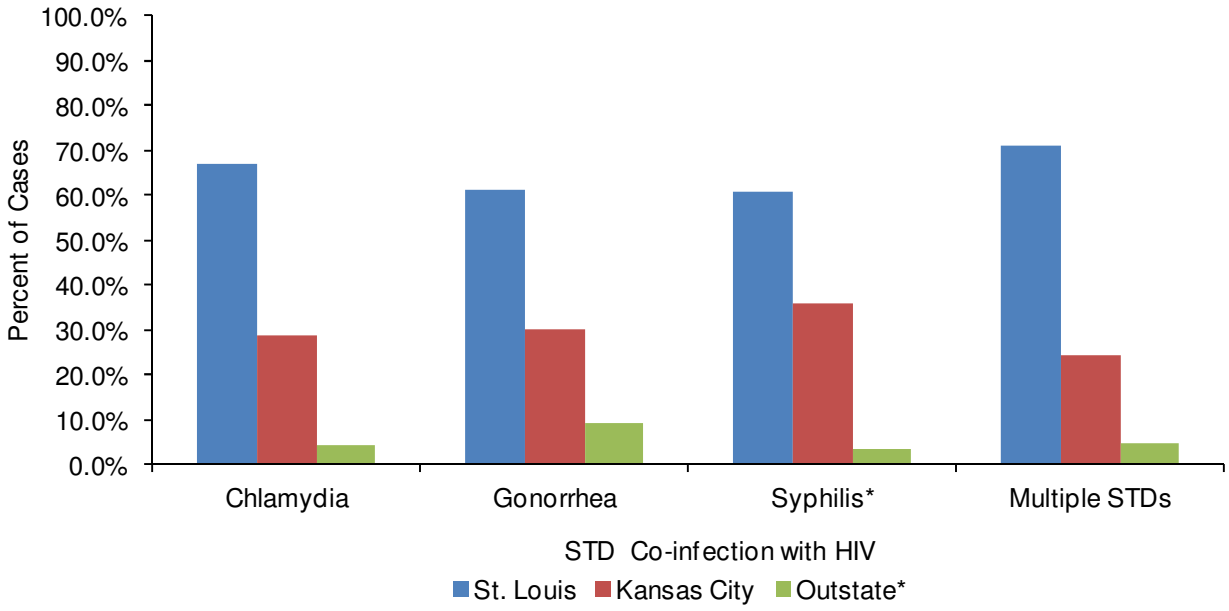
Of the 347 reported STD co-morbidity cases, 89% were among males (Figure 34). Males represented a slightly higher proportion of the STD co-morbidity cases (89%) compared to all males living with HIV disease (83%).

Figure 35. HIV and STD co-infections by sex and type of co-infection, Missouri, 2011



*Only includes diagnoses of primary, secondary, and early latent syphilis.
Note: No early syphilis co-infections were reported among females living with HIV disease in 2011.

Figure 36. HIV and STD co-infections by geographic region of STD diagnosis, Missouri, 2011

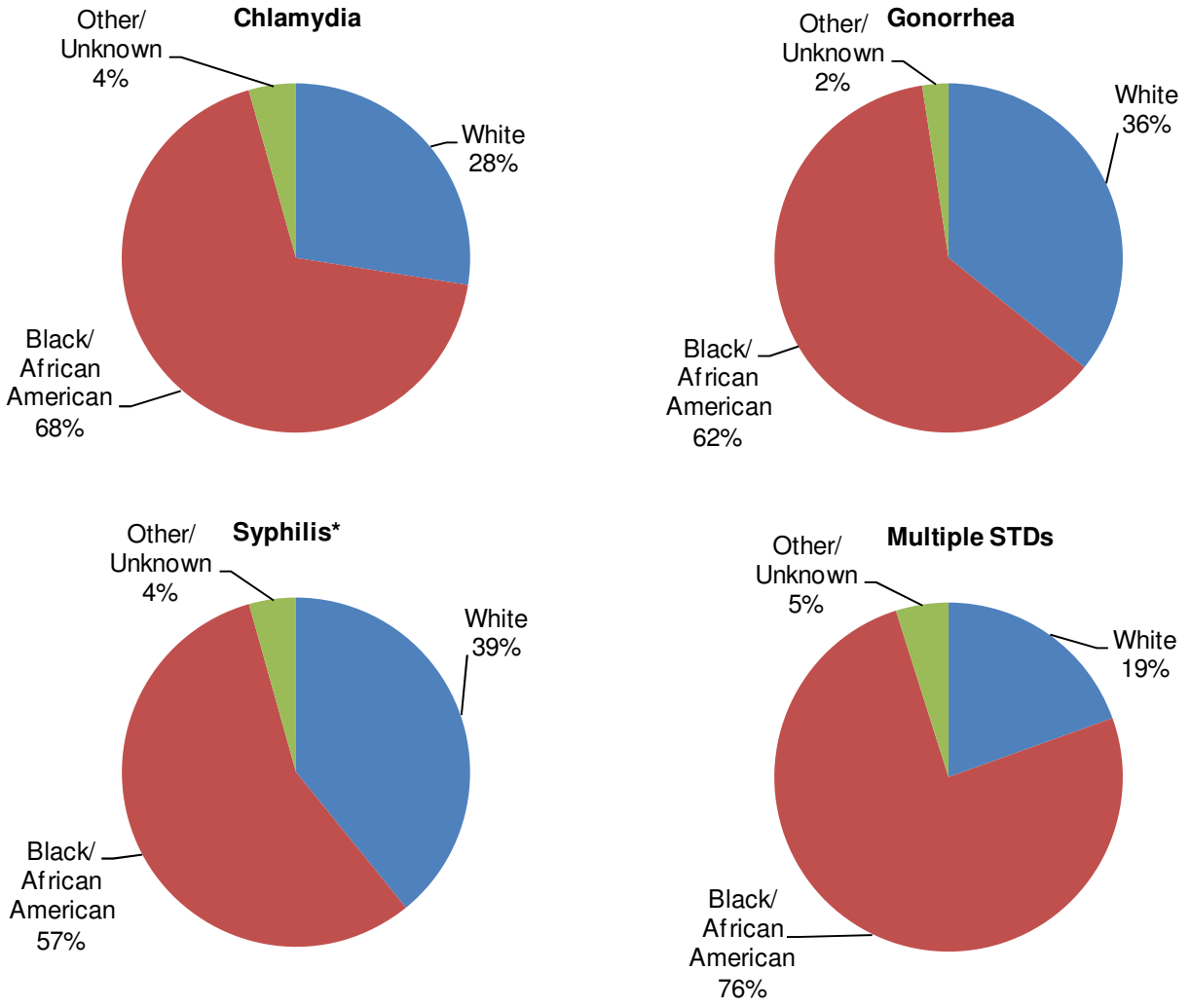


*Includes those diagnosed in the North Central, Northwest, Southeast, and Southwest regions.

There were differences in the distribution of STD co-morbidity types by sex (Figure 35). Among females living with HIV that were reported with an STD co-morbidity in 2011, 60% were co-infected with chlamydia, 32% with gonorrhea, and 8% with multiple STDs. In contrast, among males living with HIV reported with an STD co-morbidity in 2011, only 22% were co-infected with chlamydia, 36% with gonorrhea, 12% with multiple STDs, and 30% with early syphilis.

Among all HIV and STD co-morbidity types, the greatest proportion of cases was diagnosed in the St. Louis HIV region (Figure 36). Among those living with HIV that were reported with chlamydia in 2011, 67% were residents of the St. Louis HIV region when diagnosed with chlamydia. The St. Louis HIV region represented 61% of all living HIV cases reported with gonorrhea in 2011, 61% of those with early syphilis, and 71% of those with multiple STD co-morbidities. In all regions, gonorrhea and HIV infections represented the largest co-morbidity type reported.

Figure 37. HIV and STD co-infections by race/ethnicity and type of co-infection, Missouri, 2011



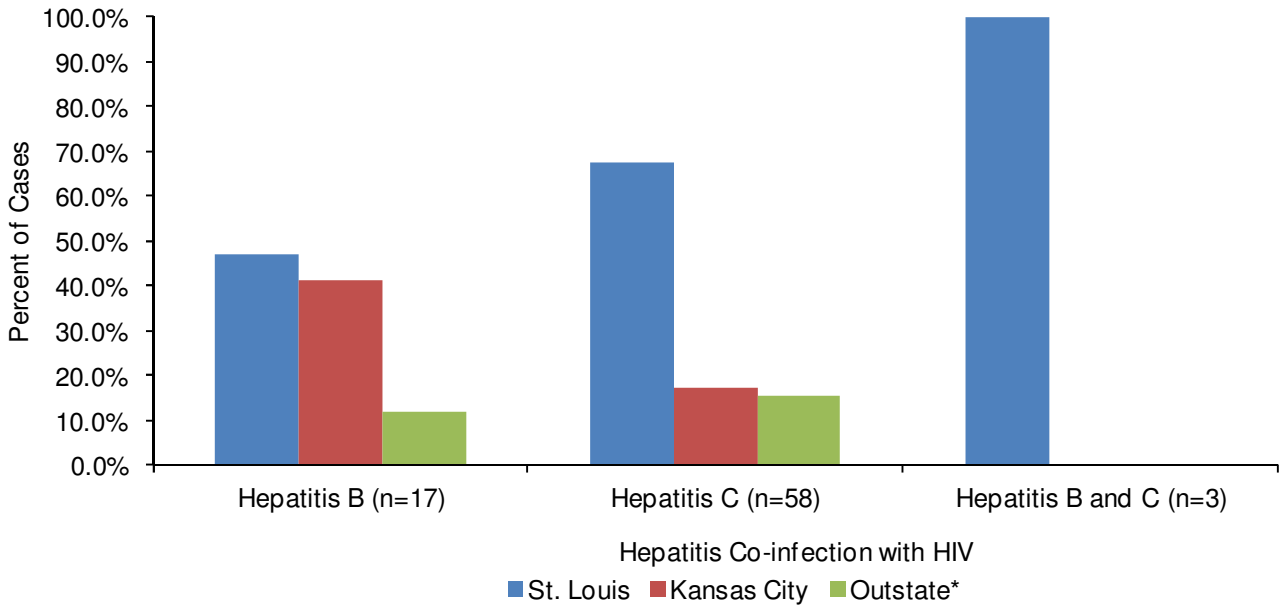
*Only includes diagnoses of primary, secondary, and early latent syphilis.

There were differences in the distribution of race/ethnicity among HIV and STD co-morbidities depending on the type of STD diagnosed (Figure 37). The proportion of co-morbidity cases attributed to blacks/African Americans was highest among those co-infected with multiple STDs (76%), followed by those co-infected with chlamydia (68%). In all instances minorities were disproportionately represented in the proportion of co-morbidities that were reported. Although blacks/African Americans represented only 44% of living HIV disease cases, they represented 64% of individuals diagnosed with an STD co-morbidity.

Table 31. Reported hepatitis B and C infections among persons living with HIV disease, Missouri, 2011

Co-infection	Diagnosed with HIV Prior to 2011 N	Diagnosed with HIV in 2011 N	Total Co-infections N
Acute Hepatitis B	0	0	0
Chronic Hepatitis B	12	3	15
Prenatal Hepatitis B	0	2	2
Perinatal Hepatitis B	0	0	0
Acute Hepatitis C	0	0	0
Chronic Hepatitis C	49	9	58
Chronic Hepatitis B & C	2	1	3
Total	**63**	**15**	**78**

Figure 38. HIV and hepatitis co-infections by geographic region of hepatitis diagnosis, Missouri, 2011

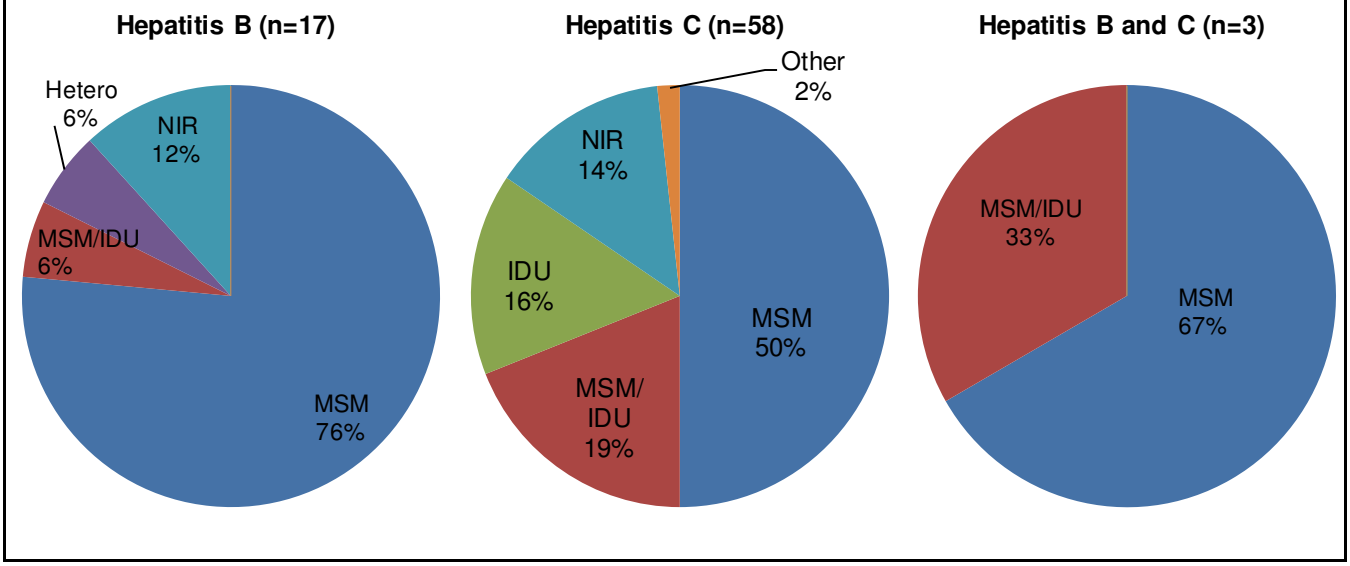


*Includes those diagnosed in the North Central, Northwest, Southeast, and Southwest regions.

Of the 11,138 individuals living with HIV disease, 78 were reported with a hepatitis co-morbidity in 2011 (Table 31). The majority of those reported with a hepatitis co-morbidity were diagnosed with HIV prior to 2011 (81%). The largest number of HIV co-morbidities was with chronic hepatitis C. The proportion of reported hepatitis infections in 2011 that were living with HIV varied by infection type. Of the 278 chronic hepatitis B cases reported in 2011, 6% were among individuals living with HIV. Only 1% of chronic hepatitis C cases reported in 2011 were among individuals living with HIV.

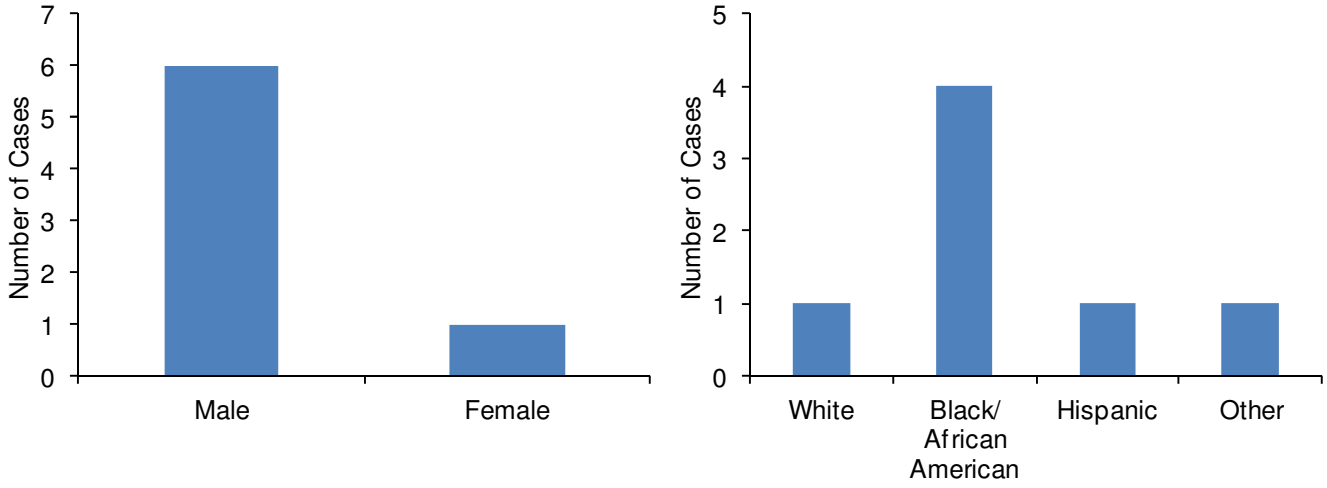
Among persons living with HIV disease that were reported with only a hepatitis B infection in 2011, a nearly equal number were residing in the St. Louis HIV region (8) and the Kansas City HIV region (7) at the time of the hepatitis diagnosis (Figure 38). Among HIV-positive persons reported with only a hepatitis C infection in 2011, the majority were residing in the St. Louis HIV region (67%) at the time of the hepatitis diagnosis. Among persons living with HIV that were reported with both a hepatitis B and hepatitis C in 2011, all were residing in the St. Louis HIV region at the time of the hepatitis diagnosis.

Figure 39. HIV and hepatitis co-infections by HIV exposure category and type of co-infection, Missouri, 2011



Among persons living with HIV disease and reported with only a hepatitis B infection in 2011, 76% were among MSM (Figure 39). Among hepatitis C co-morbidity cases 16% were attributed to IDU, and 19% were attributed to both IDU and MSM.

Figure 40. HIV and TB disease co-infections by sex, by race, Missouri, 2011



Among the 11,138 persons living with HIV disease, seven were reported to be diagnosed with TB disease in 2011. Of those co-infected with TB disease in 2011, four of the co-infections were among persons diagnosed with HIV disease prior to 2011. Co-infections were reported among persons 25-64 years of age at the end of 2011. Six of the co-infections were among males, and four of the co-infections were among blacks/African Americans (Figure 40).

Key Highlights: What are the number and characteristics of the individuals who know they are HIV positive but who are not in care?

Magnitude of the Problem

- Overall, 61% of Missourians living with HIV disease had their primary care medical needs met (i.e., evidence of a CD4 lymphocyte or viral load test or diagnosis with an opportunistic infection in 2011).
- Persons enrolled in HIV medical case management were significantly more likely to have their primary care medical needs met. Of the 11,138 persons living with HIV disease in Missouri, 4,737 (43%) were enrolled in medical case management at some point in 2011. Eight-nine percent of individuals in case management had their primary care medical needs met in 2011.
- Persons living with HIV who were subcategorized as AIDS cases in 2011 were more likely to have their medical needs met (69%) compared to persons subcategorized as HIV cases (51%). Similar patterns were seen regardless of whether the individuals were enrolled in HIV medical case management.
- Enrollment in HIV medical case management and current diagnostic status (i.e., HIV or AIDS) were important factors influencing unmet need.

Where

- Overall, the proportion of individuals with a met need was greatest in the Southwest HIV region (71%), and lowest in the St. Louis HIV region (55%).
- Among those enrolled in HIV medical case management, the proportion with a met need ranged from 84% in the St. Louis HIV region to 96% in the Kansas City, North Central, Northwest, and Southwest HIV regions.
- For those not enrolled in HIV medical case management, the proportion with a met need ranged from 33% in the St. Louis HIV region to 53% in the Northwest HIV region.

Who

Sex

- Overall, there were not significant differences observed in unmet need by sex, after controlling for factors such as enrollment in HIV medical case management, and current diagnostic status (i.e., HIV or AIDS).

Race/Ethnicity

- Unmet need tended to be greater among minority populations, although factors such as case management and diagnostic status influenced the relationship between race and unmet need.
- Among persons diagnosed in 2008-2010, the likelihood of entering care was lower for blacks/African Americans than other races.

Age

- There were differences in unmet need by current age among individuals enrolled in HIV medical case management. Unmet need was greatest among individuals 19-24 years of age (14%).
- There were differences in unmet need by current age among individuals not enrolled in HIV medical case management. Unmet need was greatest among children 2-12 years of age (77%).

Exposure Category

- Unmet need by exposure category varied depending upon enrollment in medical case management and current diagnosis status.
- There were not differences in unmet need by exposure category among HIV cases or among AIDS cases enrolled in medical case management.
- There were differences in unmet need by exposure category among HIV cases and among AIDS cases not enrolled in case management. Among HIV cases not enrolled in case management, unmet was lowest among pediatric cases (62%). Among AIDS cases not enrolled in case management, unmet need was lowest among individuals with no indicated risk (41%).

Table 32. The impact of HIV case management on access to primary medical care by region* and race/ethnicity among individuals living with HIV disease as of December 31, 2011

Region	Total HIV Population		Enrolled in Case Management		Not Enrolled in Case Management	
	Met Need** N (%)	Unmet Need*** N (%)	Met Need** N (%)	Unmet Need*** N (%)	Met Need** N (%)	Unmet Need*** N (%)
St. Louis Region						
White	1,210 (53.3%)	1,059 (46.7%)	688 (87.1%)	102 (12.9%)	522 (35.3%)	957 (64.7%)
Black/African American	1,615 (57.0%)	1,216 (43.0%)	1,177 (81.9%)	260 (18.1%)	438 (31.4%)	956 (68.6%)
Hispanic	65 (48.5%)	69 (51.5%)	51 (86.4%)	8 (13.6%)	14 (18.7%)	61 (81.3%)
Other/Unk.	42 (56.8%)	32 (43.2%)	32 (91.4%)	3 (8.6%)	10 (25.6%)	29 (74.4%)
Total	**2,932 (55.2%)**	**2,376 (44.8%)**	**1,948 (83.9%)**	**373 (16.1%)**	**984 (32.9%)**	**2,003 (67.1%)**
Kansas City Region						
White	1,158 (64.8%)	628 (35.2%)	543 (96.1%)	22 (3.9%)	615 (50.4%)	606 (49.6%)
Black/African American	872 (65.6%)	458 (34.4%)	612 (94.9%)	33 (5.1%)	260 (38.0%)	425 (62.0%)
Hispanic	121 (57.3%)	90 (42.7%)	69 (98.6%)	1 (1.4%)	52 (36.9%)	89 (63.1%)
Other/Unk.	44 (68.8%)	20 (31.3%)	24 (92.3%)	2 (7.7%)	20 (52.6%)	18 (47.4%)
Total	**2,195 (64.7%)**	**1,196 (35.3%)**	**1,248 (95.6%)**	**58 (4.4%)**	**947 (45.4%)**	**1,138 (54.6%)**
Northwest Region						
White	65 (73.9%)	23 (26.1%)	37 (94.9%)	2 (5.1%)	28 (57.1%)	21 (42.9%)
Black/African American	11 (68.8%)	5 (31.3%)	5 (100.0%)	0 (0.0%)	6 (54.5%)	5 (45.5%)
Hispanic	0 (0.0%)	4 (100.0%)	0 (N/A)	0 (N/A)	0 (0.0%)	4 (100.0%)
Other/Unk.	0 (N/A)	0 (N/A)	0 (N/A)	0 (N/A)	0 (N/A)	0 (N/A)
Total	**76 (70.4%)**	**32 (29.6%)**	**42 (95.5%)**	**2 (4.5%)**	**34 (53.1%)**	**30 (46.9%)**
North Central Region						
White	208 (66.9%)	103 (33.1%)	127 (95.5%)	6 (4.5%)	81 (45.5%)	97 (54.5%)
Black/African American	68 (56.7%)	52 (43.3%)	42 (97.7%)	1 (2.3%)	26 (33.8%)	51 (66.2%)
Hispanic	19 (70.4%)	8 (29.6%)	14 (100.0%)	0 (0.0%)	5 (38.5%)	8 (61.5%)
Other/Unk.	5 (71.4%)	2 (28.6%)	5 (100.0%)	0 (0.0%)	0 (0.0%)	2 (100.0%)
Total	**300 (64.5%)**	**165 (35.5%)**	**188 (96.4%)**	**7 (3.6%)**	**112 (41.5%)**	**158 (58.5%)**
Southwest Region						
White	508 (73.0%)	188 (27.0%)	361 (96.0%)	15 (4.0%)	147 (45.9%)	173 (54.1%)
Black/African American	50 (56.2%)	39 (43.8%)	39 (95.1%)	2 (4.9%)	11 (22.9%)	37 (77.1%)
Hispanic	29 (65.9%)	15 (34.1%)	22 (95.7%)	1 (4.3%)	7 (33.3%)	14 (66.7%)
Other/Unk.	8 (61.5%)	5 (38.5%)	7 (100.0%)	0 (0.0%)	1 (16.7%)	5 (83.3%)
Total	**595 (70.7%)**	**247 (29.3%)**	**429 (96.0%)**	**18 (4.0%)**	**166 (42.0%)**	**229 (58.0%)**
Southeast Region						
White	141 (66.8%)	70 (33.2%)	97 (94.2%)	6 (5.8%)	44 (40.7%)	64 (59.3%)
Black/African American	54 (58.1%)	39 (41.9%)	40 (83.3%)	8 (16.7%)	14 (31.1%)	31 (68.9%)
Hispanic	3 (60.0%)	2 (40.0%)	2 (100.0%)	0 (0.0%)	1 (33.3%)	2 (66.7%)
Other/Unk.	1 (100.0%)	0 (0.0%)	1 (100.0%)	0 (0.0%)	0 (N/A)	0 (N/A)
Total	**199 (64.2%)**	**111 (35.8%)**	**140 (90.9%)**	**14 (9.1%)**	**59 (37.8%)**	**97 (62.2%)**
Statewide (MO)****						
White	3,437 (61.6%)	2,145 (38.4%)	1,930 (92.5%)	156 (7.5%)	1,507 (43.1%)	1,989 (56.9%)
Black/African American	2,979 (60.2%)	1,972 (39.8%)	2,074 (86.3%)	330 (13.7%)	905 (35.5%)	1,642 (64.5%)
Hispanic	243 (55.1%)	198 (44.9%)	160 (94.1%)	10 (5.9%)	83 (30.6%)	188 (69.4%)
Other/Unk.	104 (63.4%)	60 (36.6%)	71 (92.2%)	6 (7.8%)	33 (37.9%)	54 (62.1%)
Total	**6,763 (60.7%)**	**4,375 (39.3%)**	**4,235 (89.4%)**	**502 (10.6%)**	**2,528 (39.5%)**	**3,873 (60.5%)**

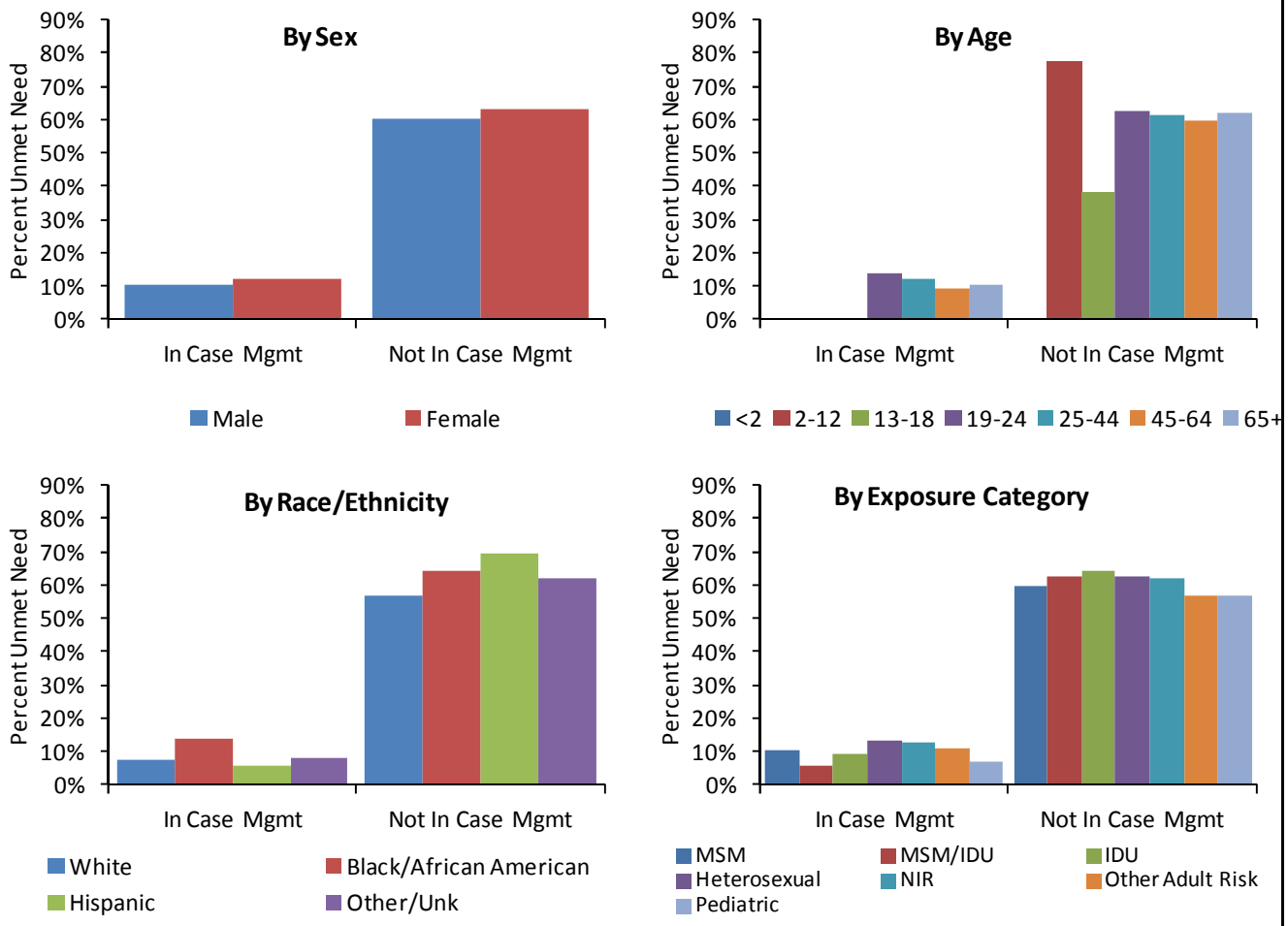
*Includes all individual still living whose most recent diagnosis (i.e., HIV or AIDS) occurred in the region. Does not reflect the number of individuals currently living in the region.
**Evidence of a CD4+ T-lymphocyte or viral load laboratory test result or diagnosis with an opportunistic infection in the current year.
*** No evidence of a CD4+ T-lymphocyte or viral load laboratory test result or diagnosis with an opportunistic infection in the current year.
****Statewide figures include living individuals whose most recent diagnosis occurred in a correctional facility or is unknown.

Of the 11,138 persons living with HIV at the end of 2011, 61% had evidence of met primary care medical needs (i.e., met need) in 2011 (Table 32). The primary care medical need was considered to be met if an individual had a CD4 lymphocyte or viral load laboratory test or diagnosis of an opportunistic infection in 2011 that was reported to MDHSS. There were differences in the proportion of individuals with met needs depending on whether the individual was enrolled in HIV medical case management in 2011. A significantly greater proportion of those enrolled in HIV medical case management had a met need (89%) in 2011 compared to those not enrolled (40%). Several factors may contribute to the differences observed. First, case management assists clients to locate and access medical care by referral. Second, case management clients receive health education and counseling to understand the nature of routine medical care. Third, case management assists clients in identifying appropriate payer sources to fund routine medical care. Finally, it is possible that those not enrolled in case management were less likely to be currently living in Missouri, and therefore indicators of primary medical care would not be reported to MDHSS. The data were presented based on individuals whose most recent diagnosis occurred in Missouri, not those known to be currently living in Missouri, as accurate data on current residence are difficult to collect.

There were differences in the proportion of individuals with a met need by HIV region. It is important to note that data presented by HIV region represent those who currently have a met need that were most recently diagnosed with HIV or AIDS in the selected HIV region. It does not necessarily reflect where individuals are currently living and receiving care. Overall, the proportion of individuals with a met need was greatest in the Southwest HIV region (71%), and lowest in the St. Louis HIV region (55%). The pattern was slightly different between the regions depending on whether individuals were enrolled in HIV medical case management. For those not enrolled in HIV medical case management, the proportion with a met need ranged from 33% in the St. Louis HIV region to 53% in the Northwest HIV region.

There were differences in the proportion of persons with a met need by race/ethnicity. Overall statewide, met need was lowest among Hispanics (55%) . Within each region and depending on whether the individuals were enrolled in HIV medical case management, the patterns by race/ethnicity varied slightly. Among individuals not enrolled in case management, the proportion of blacks/African Americans with a met need was lower in all HIV regions compared to whites, and the proportion of Hispanics with a met need was lower in all HIV regions compared to whites.

Figure 41. Percent of individuals living with HIV having an unmet* primary medical care need in 2011 by enrollment in HIV case management and selected characteristics



*No evidence of a CD4+ T-lymphocyte or viral load laboratory test result or diagnosis with an opportunistic infection in the current year.

Figure 41 examines the proportion of cases with unmet need depending on whether the individuals were enrolled in HIV medical case management for selected characteristics. There were not differences in the proportion of individuals with unmet needs between the sexes, regardless of whether enrolled in HIV medical case management. There were differences in the proportion of individuals with unmet needs by current age among those not enrolled in case management. Unmet need was greatest among children 2-12 years of age (77%). Those currently 13-18 years of age had the lowest proportion of unmet need. There were differences in the proportion of individuals with unmet needs by current age among those enrolled in case management. Unmet need was greatest among 19-24 year olds (14%). There were differences in the proportion of individuals with unmet needs by race/ethnicity among those not enrolled in case management, and among those enrolled in case management. Among those not enrolled in case management, unmet need was greatest among Hispanics (69%) and lowest among whites (57%). Among those enrolled in case management, unmet need was greatest among blacks/African Americans (14%). There were not significant differences in the proportion of individuals with unmet need by exposure category among those not in case management, but there were differences among those enrolled in case management. For individuals enrolled in case management, unmet need was greatest among persons reporting heterosexual contact (13%) or no indicated risk (13%).

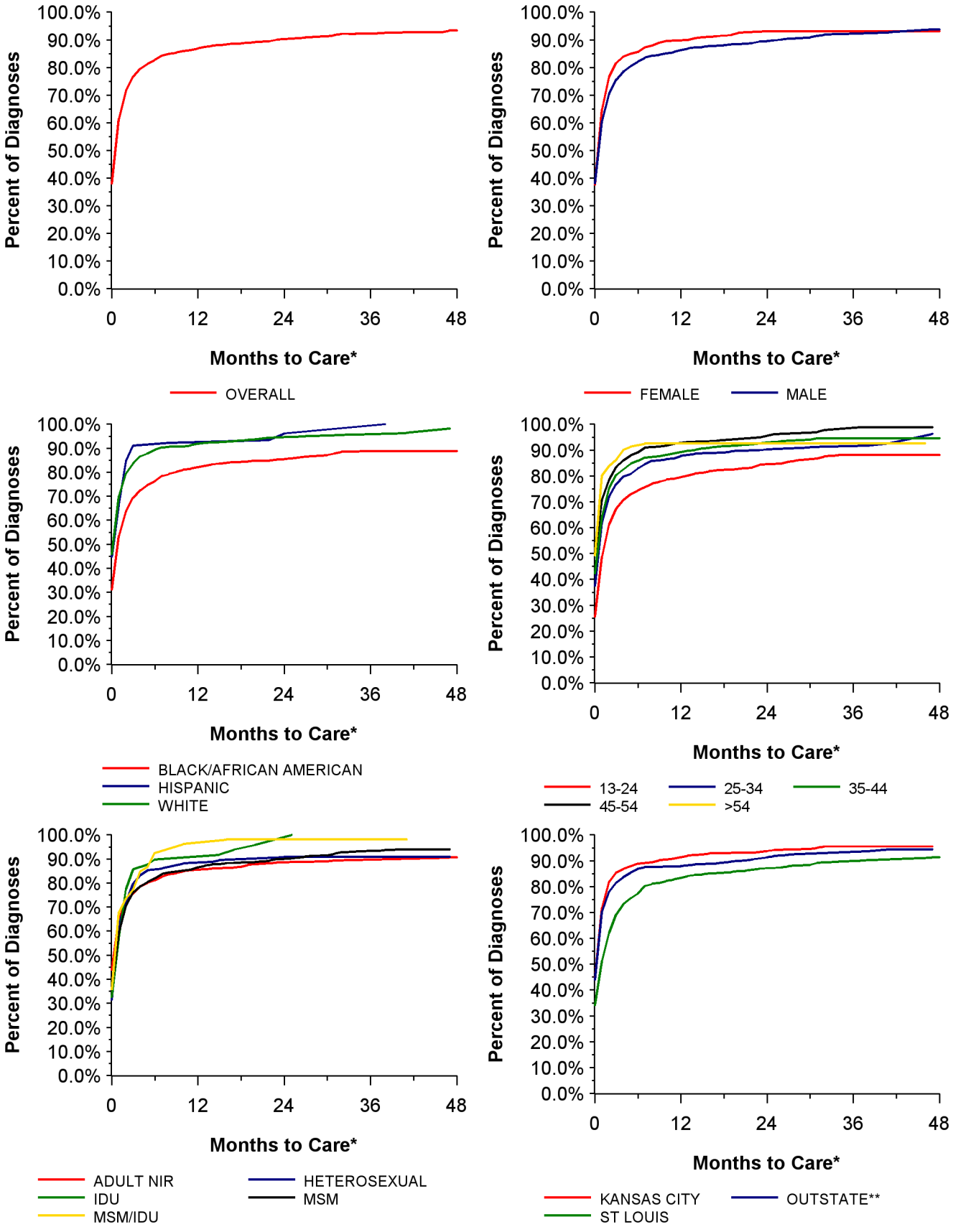
Table 33 examines the proportion of cases reported with unmet need based on current status (i.e., HIV or AIDS) and selected characteristics. Overall, the proportion of those with an unmet need was greater for those classified as HIV cases compared to AIDS cases. The same trend was observed regardless of whether individuals were enrolled in HIV medical case management.

Table 33. Percent of individuals living with HIV having an unmet* primary medical care need in 2011 by current status, enrollment in HIV case management, and selected characteristics**

	Total Population		Enrolled in Case Management		Not Enrolled in Case Management	
	HIV Cases with Unmet Need* % (N)	AIDS Cases with Unmet Need* % (N)	HIV Cases with Unmet Need* % (N)	AIDS Cases with Unmet Need* % (N)	HIV Cases with Unmet Need* % (N)	AIDS Cases with Unmet Need* % (N)
Sex						
Male	50.1% (2,128)	31.1% (1,548)	12.7% (182)	8.6% (199)	69.2% (1,946)	50.5% (1,349)
Female	45.4% (432)	27.8% (267)	14.3% (62)	10.6% (59)	71.7% (370)	51.9% (208)
Race/Ethnicity						
White	46.1% (1,204)	31.7% (941)	8.7% (74)	6.7% (82)	64.4% (1,130)	49.3% (859)
Black/African American	52.4% (1,209)	28.8% (763)	17.8% (162)	11.2% (168)	75.0% (1,047)	51.7% (595)
Hispanic	52.4% (108)	38.3% (90)	8.1% (6)	4.2% (4)	77.3% (102)	61.9% (86)
Other/Unknown	49.4% (39)	24.7% (21)	6.3% (2)	8.9% (4)	78.7% (37)	42.5% (17)
Current Age‡						
<2	0.0% (0)	-- (0)	0.0% (0)	-- (0)	0.0% (0)	-- (0)
2-12	61.5% (16)	50.0% (1)	0.0% (0)	0.0% (0)	76.2% (16)	100.0% (1)
13-18	26.2% (11)	16.7% (2)	0.0% (0)	0.0% (0)	44.0% (11)	22.2% (2)
19-24	34.9% (142)	18.3% (24)	14.8% (38)	11.7% (11)	68.9% (104)	35.1% (13)
25-44	46.7% (1,161)	29.2% (628)	14.1% (139)	9.7% (111)	68.0% (1,022)	51.3% (517)
45-64	54.3% (1,134)	31.2% (1,061)	11.1% (65)	8.2% (128)	71.2% (1,069)	50.6% (933)
65+	65.8% (96)	39.9% (99)	9.5% (2)	10.8% (8)	75.2% (94)	52.3% (91)
Exposure Category						
Men who have sex with men	47.4% (1,483)	31.4% (1,145)	12.6% (143)	8.6% (147)	67.2% (1,340)	51.3% (998)
Men who have sex with men and inject drugs	41.1% (85)	30.0% (110)	5.1% (5)	6.3% (12)	73.4% (80)	55.4% (98)
Injecting drug use	54.0% (128)	32.3% (130)	12.7% (10)	7.6% (15)	74.7% (118)	55.8% (115)
Heterosexual contact	49.2% (356)	29.8% (248)	15.2% (46)	11.5% (51)	73.6% (310)	50.9% (197)
No indicated risk (NIR)	56.6% (471)	25.9% (160)	15.5% (37)	10.5% (32)	73.1% (434)	41.2% (128)
Other Adult Risk	60.0% (9)	35.7% (15)	25.0% (1)	7.1% (1)	72.7% (8)	50.0% (14)
Pediatric	46.7% (28)	25.0% (7)	11.1% (2)	0.0% (0)	61.9% (26)	43.8% (7)
Total	**49.2%(2,560)**	**30.6%(1,815)**	**13.0%(244)**	**9.0%(258)**	**69.6%(2,316)**	**50.7%(1,557)**

*No evidence of a CD4+ T-lymphocyte or viral load laboratory test result or diagnosis with an opportunistic infection in the current year.
**HIV case vs. AIDS case.
‡Based on age as of December 31, 2011
Note: Rows with the percent marked '- -' indicates that there were no living persons in the selected category.

Figure 42. Length of time in months to enter care* after initial HIV diagnosis among persons diagnosed between 2008 and 2010, by selected characteristics, Missouri



*Defined as first reported CD4 lymphocyte or viral load lab result reported to MDHSS.
**Outstate includes the North Central, Northwest, Southeast, and Southwest HIV regions.
Source: eHARS

Figure 42 examines the length of time until first entry into care among persons newly diagnosed with HIV disease between 2008 and 2010. Entry into care was measured as the receipt of a CD4 lymphocyte or viral load laboratory result by MDHSS. Overall, 87% of persons recently diagnosed had entered care by one year after diagnosis. Within four years of initial diagnosis, 93% had entered care. There were not differences in the proportion of new diagnoses entering care between males and females. There were differences in the proportion of new diagnoses entering care by race/ethnicity. Over time, a significantly lower proportion of blacks/African Americans entered care compared to whites and Hispanics. At one year after diagnosis, only 81% of blacks/African Americans had entered care, compared to 92% of Hispanics and 91% of whites. As the age of the individual at the time of diagnosis increased, the probability of entering care over time also increased. Of persons diagnosed between the ages of 13 and 24, only 79% entered care within one year of diagnosis, compared to 93% of persons 45-54 years of age at the time of diagnosis. There were not significant differences over time in likelihood to enter care by exposure category. Differences in entry to care following diagnosis varied by HIV region of diagnosis. Persons diagnosed in the St. Louis HIV region were significantly less likely to enter into care over time. At one year after diagnosis, 91% of persons diagnosed in the Kansas City HIV region, 88% of persons diagnosed in Outstate, and 83% of persons diagnosed in the St. Louis HIV region entered care. Entry into care remained lower among those recently diagnosed in the St. Louis HIV region over time. These data can be used to target populations for outreach efforts to assist with entry into HIV medical care among persons recently diagnosed.

This page was intentionally left blank

Glossary

AIDS case
This refers to an individual who has been infected with human immunodeficiency virus (HIV) that is in the later stages of the disease process and has met the case definition for AIDS.

Case rate
The frequency of a defined event in a specified population for a given time period, usually expressed as the number of cases per 100,000 people in a population. Case rate is calculated by dividing the number of cases in the population of interest by the total number of people in the population. Then multiplying by 100,000 to get the rate per 100,000.

Case definition for AIDS
All HIV-infected people who have fewer than 200 $CD4^+$ T cells per cubic millimeter of blood (healthy adults usually have 800 to 1,200, with 1,000 the average). In addition, the definition includes 26 clinical conditions that affect people with advanced HIV disease. Most of these conditions are opportunistic infections that generally do not affect healthy people.

CD4+ T cells
This is a white blood cell with CD4 molecules on its surface. These cells play an important role in the human immune system. Sometimes referred to as "helper" cells, they orchestrate the body's response to certain microorganisms such as viruses. HIV virus particles attack and utilize these cells to multiply.

Cumulative number of cases
The number of all cases diagnosed with a particular condition including living and deceased individuals in a specified area.

Date of diagnosis
The date a laboratory makes a diagnosis based on the chemical analysis of a specimen.

Epidemic
The "occurrence in a community or region of cases of an illness, specified health-related behavior, or other health-related events clearly in excess of normal expectancy."

Highly active antiretroviral therapy (HAART)
This is a treatment protocol using a combination of antiretroviral drugs to suppress the HIV virus. These drugs consist of four basic classes depending on their method of suppression: reverse transcriptase (RT) inhibitors, protease inhibitors (PI), fusion inhibitors, and integrase inhibitors.

HIV case
It refer to an individual who has been infected with the human immunodeficiency virus (HIV) that is in the early stages of the disease process and has not met the case definition for AIDS.

HIV disease case
This includes all individuals who have been infected with the human immunodeficiency virus (HIV). Cases can be sub-classified into either HIV cases or AIDS cases.

Incidence
The number of new cases of a specified condition diagnosed within a given time. The calendar year is used in the *Profiles* to calculate incidence.

Incidence rate
The number of new cases diagnosed in a specified population for a given time period, usually expressed as the number of cases per 100,000 people in a population. Incidence rate is calculated by dividing the number of new cases in the population of interest by the total number of people in that population. Then multiplying by 100,000 to get the rate per 100,000.

Modes of transmission
Also referred to as **exposure categories**, this term refers to the way in which an individual acquired the HIV virus. The most common modes of transmission are: men who have sex with men (MSM), heterosexual contact,

injection drug users (IDUs), men who have sex with men and practice injection drug use (MSM/IDUs), hemophilia/coagulation disorder, and blood transfusion or tissue recipients.

Point prevalence
This refers to the number of persons living with a specified condition at a given point in time. December 31st, is used for the *Profiles* to calculate the number of persons living with HIV or AIDS for each year.

Prevalence rate
The number of individuals living with the specified condition in a specified population for a given time period, usually expressed as the number of cases per 100,000 people in a population. A prevalence rate is calculated by dividing the number of living cases in the population of interest by the total number of people in that population. Then multiplying by 100,000 to get the rate per 100,000.

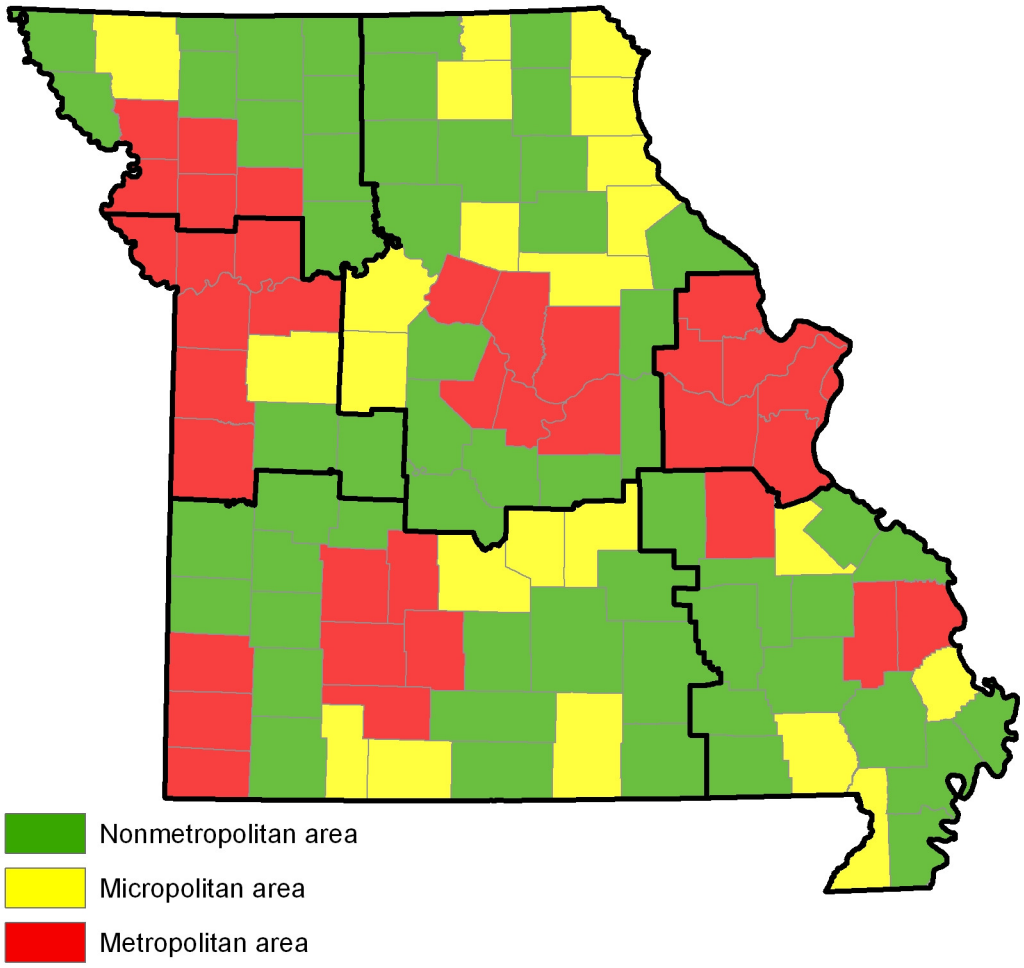
Sexually Transmitted Infections
Sexually transmitted infections (STIs), commonly called **sexually transmitted diseases (STDs)** and once called venereal diseases, are among the most common infectious diseases in the United States today. They are a group of infections that are predominantly transmitted through sexual activity.

Sexually Transmitted Infections and the Organisms Responsible

Disease	Organism(s)
Acquired Immunodeficiency Syndrome (AIDS)	Human immunodeficiency virus
Chlamydial infections	Chlamydia trachomatis
Gonorrhea	Neisseria gonorrhoeae
Syphilis	Treponema pallidum

Appendix

Metropolitan, micropolitan, and nonmetropolitan areas by county



Source: Missouri Census Data Center, MABLE/Geocorr2K. 2008 Metropolitan Divisions.